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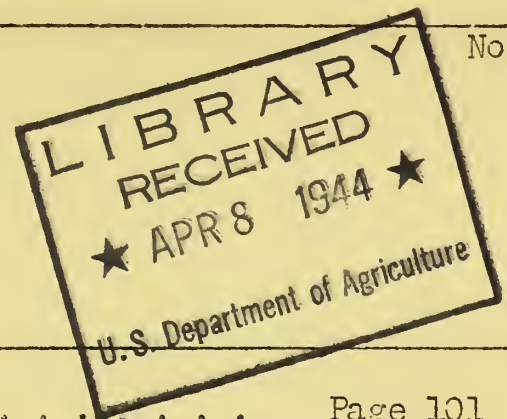
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SOIL CONSERVATION LITERATURE
SELECTED CURRENT REFERENCES

V.5

May/June, 1941

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"It is now a question whether human culture, which rests upon the use of the soil, can devise and enforce ways of dealing with the earth which will preserve this source of life so that it may support the men of the ages to come. If this cannot be done we must look forward to the time - remote it may be, yet clearly discernible - when our kind, having wasted its great inheritance, will fade from the earth because of the ruin it has accomplished."

N.S. Shaler

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Mildred Benton

Mildred Benton
Librarian

PERIODICAL ARTICLESAlfalfa

Howard, I.M. Alfalfa beats its enemies. Farmers and scientists sold on its great value have joined to lift alfalfa beyond threats of extinction in the western Cornbelt states. Successful Farming 39(5):15, 57, illus. May 1941. 6 Su12

"Alfalfa stands maintained thruout some of the driest years in the agricultural history of the nation, successful control of grasshoppers by poisoning, work now being done in developing new varieties that are drought- and wilt-resistant, and the value of the crop for feed and erosion-control indicate that a sharp increase in acreage is in the offing thru seasons just ahead."

Association of American Geographers

[Association of American geographers] Titles and abstracts of papers, Baton Rouge, Louisiana, December, 1940. Assoc. Amer. Geog. Ann. 31(1):55-75. Mar. 1941. 500 As73

Water management in the federal flood control program, by Otto E. Guthe, p.56; Climate of the Southwest in relation to accelerated erosion, by C. W. Thornthwaite, C. F. S. Sharpe, and Earl F. Dosch, p.70; Excessive rainfalls as a serious handicap in the South, by Stephen S. Visher, p.71.

Contour Farming

Aylen, D. Who built the first contour ridges? Rhodesia Agr. Jour. 38(3): 144-148, illus. Mar. 1941. 24 R34

Dams

Baker, Ralph. The story of Friant Dam to date. The construction of the fourth largest straight gravity-type dam in the world is the interesting subject of this article. Earth Mover 28(4):14-17, illus. Apr. 1941. 290.8 Ea7

Blair, C.M. Supervision of dams and reservoirs in Connecticut. New England Waterworks Assoc. Jour. 55(1):12-22. Mar. 1941. 292.9 N44

Christison, W.E. Asphalt facing on debris dam. Upstream slope of earth-fill dam and 1,200-ft length of wasteway channel paved with 3-in. slab of asphaltic concrete. West. Construct. News 15(11):370-371, illus. Nov. 1940. 290.8 W522

"The West has pioneered in the use of asphaltic concrete linings for flood control channels, canals and other hydraulic structures. This

article reviews the latest step in this important western development, an installation in which asphaltic concrete has been used as a facing for a dam, and as a lining on both the sides and bottom of a spillway channel."

Green Mountain dam. Earth and rockfill storage structure of the \$44,000,000 Colorado-Big Thompson project under construction on the Blue River near Kremmling, Colo. - Modified design of fill permits storage of material excavated from dam site and reuse in impervious zone. West.Construct. News 16(3):78-81, illus. Mar. 1941. 290.8 W522

Hoffman, I.C. Prado Dam project completed. Key unit of \$15,000,000 Orange County, California, flood control project constructed under the direction of the Corps of Engineers is finished ahead of schedule by Prado Constructors, Inc. - Deep double cut-off wall for spillway presented unusually difficult excavation problems. West.Construct. News 16(2):48-51, illus. Feb. 1941. 290.8 W522

Hohl, L.L. Frozen-earth dam at Grand Coulee. Mech. Engin. [New York] 63(5):386. May 1941. 291.9 Am3J
Comment on article by L.V. Froage in Mechanical Engineering, Jan. 1941, pp. 9-15, 36.

Karpoff, K.P. Time required to saturate an earth dam. Civ. Engin. 11(4): 238-240, illus. Apr. 1941. 290.8 C49

Stone, E.G. New type of dam. Commonwealth Engin. 28(7):199-201, illus. Feb. 1, 1941. L.C.

This article describes "the first practical instance of a suspension dam" built by the author at Narrabeen, New South Wales.

County Planning

Smart, C.A. Democracy advances. The Land 1(1):37-39. Winter issue, 1941. 279.8 L22

About the Ross County Advisory Council which began in Ross County, Ohio with a Land Use Committee "of four good farmers".

Defense Aspects

Renner, G.T. National defense and conservation of resources. The case for conservation. Frontiers of Democracy 7(61):216-217. Apr. 15, 1941. 280.8 Sol25
In two parts.

Robertson, A.T. Planning for defense - and after. U.S. Bur. Agr. Econ., Land Policy Rev. 4(3):26-31. Mar. 1941. 1 Ec7La

How USDA workers, including SCS, assisted in collecting data for the Shenandoah valley survey of defense resources.

Drought

Baldwin-Wiseman, W.R. Further cartographic studies of drought. Roy. Met. Soc. [London] Quart. Jour. 67(288):39-47, illus. Jan. 1941. 340.9 R81

"After stating the need for precise drought data as the basis for the formulation of sound economic schemes of insurance of stock and crops against losses arising from drought, the author outlines methods by which all the requisite essential data can be derived from lengthy meteorological records:--(1) In precise month-to-month detail, with regard to all the major droughts of a review period, by means of isodef charts showing equal percentage deficiency, and (2) in general detail for the whole review period, which is limited only by the availability of an adequate supply of reliable continuous meteorological records, by means of isoagdef charts (showing equal aggregate deficiency); these, being few in number, do not involve so much labour as the production and investigation of isodef charts for each month of the period of review.

"Three typical isoagdef charts for S.E. Queensland, covering the 50-year period 1886-1935, together with sample data used in their preparation, are given in illustration of the method.

"It is also pointed out that the statistical data and charts are of material value in selecting reserve agistment areas, or in deciding as to the leasehold or freehold values of pastoral and farming properties in recurrent drought areas."

Everson, R.D. Approaching water famine calls for constructive conservation program. Farmers of Indiana must act to avoid effects of lessening rainfall and lowered water tables. Ind. Farmers' Guide 97(8):3, 18, illus. Apr. 19, 1941. 6 In2

Gillette, H.P. Forecasting by means of climatic cycles. Water Works & Sewerage 87(10):496-501. Oct. 1940. 290.8 M92

Method of forecasting climatic cycles on basis of analysis of varve and tree-ring records; indication of regular rainfall cycles of 22.2-year duration; relation between sunspot cycles and climatic cycles; method of detecting cyclic tendencies in rainfall and other climatic records; effect of solar physics on terrestrial climate.

Gillette, H.P. Prospective dry years. Pan-Am. Geol. 74(3):165-178, illus. Oct. 1940. Geol. Surv.

"Review of author's studies of periodicity of rainfall as indicated by varves and tree-rings, leading to prediction of continuing series of droughts until about 1990." Abs. Civ. Engin. 11(3):14. Mar. 1941.

Earthworms

Earthworm burrowing helps keep soil moist enough for earthworms.

Market Growers Jour. 67(10):478-479. Nov. 15, 1940. 6 M34

"In Texas, Soil Conservation Service research work on a heavy soil known as Houston black clay involved keeping several cylinders of soil well moistened for more than a month. At the start of the test the soil was rather dry -- too dry for much earthworm activity. At the

finish the moisture supplied during the test had attracted earthworms to most of the cylinders located in meadow land but not to the cylinders in cultivated fields. In the cylinders where earthworms were working the percolation rate was increased materially - more than doubled in many cases. Where there were no earthworms, the soaking of the soil had an opposite effect, expanding the soil in the cylinders and closing the passageways through which water could percolate readily."

Evaporation

Lloyd, David. Evaporation-loss per month over drainage areas, II. Loss over three areas. Roy. Met. Soc. [London] Quart. Jour. 67(288):33-38, illus. Jan. 1941. 340.9 R81

"References," p. 38.

"The data from three more large drainage areas are examined by the same method as in the former paper on this subject. The results show again that the variations in loss can be largely associated with variations in rainfall and temperature. It is also demonstrated that, with similar climatic conditions, the loss increases as the sub-surface has increasing permeability."

Penman, H. L. and Schofield, R. K. Drainage and evaporation from fallow soil at Rothamsted. Jour. Agr. Sci. [England] 31(1):[74]-109, illus. Jan. 1941. 10 J822

"References," p. 109.

A study of evaporation from water surfaces. Pub. Works 72(1):18. Jan. 1941. 290.8 M922

Quotes Prof. Glen N. Cox on records of precipitation, runoff and evaporation from a small southern watershed, 0.8 sq. mi. area in and adjacent to Baton Rouge, La.

Farm Forestry

Dorsey, R. C. A new crop from cooperation - forest products. [U.S.] Farm Credit Admin. News for Farmer Coop. 7(12):5-6, 23-24. Mar. 1941. 166.2 N47

Results of cooperative farm forestry.

"Selective" marketing increases income from farm woodlands. U.S. Soil Conserv. Serv. Reg. 5. Prog. Exch., Mar. 1941, pp. 6-7. 1.9604 P941

Cites several examples of the profit derived by Wisconsin farmers from giving more attention to woodlands in the soil conservation program.

Farm Planning

Gardner, H. H. Field unit planning. U.S. Soil Conserv. Serv., Soil Conserv. 6(10):255-256, 258, illus. Apr. 1941. 1.6 So3S

"The plans for three farms are presented here to explain the field unit method of planning."

Farm Ponds

Brackeen, L.O. More fish, less pond. Country Gent. 111(4):35-36, illus. Apr. 1941. 6 C833

Several thousand ponds already are in use in Alabama where farm fish culture got a boost from H.S. Swingle, an employee of the Alabama Experiment Station.

"Where possible, water is used from small streams, springs and artesian wells, but where such sources of water are not available, the 'run-off' water from terraced fields and pastures is utilized."

Ponds are better than gullies. Corn belt farmers are building ponds to stop gullies and help with water supply. Wallaces' Farmer and Iowa Homestead 66(7):259. Apr. 5, 1941. 6 W15

"Here are more comments on corn belt conditions by a travelling farmer. These remarks cover areas that have been running into trouble in drouth years."

Swingle, H.S. and Smith, E.V. Managing ponds for fish production. U.S. Fish and Wildlife Serv., Prog. Fish-Cult. no. 53, pp. 8-13, illus., Jan./Feb. 1941. 157.5 P94

The authors have previously published several articles on various aspects of their research on farm pond management at the Alabama experiment station.

This article deals specifically with principles of management of bodies of water for fishing and the rearing of young fish.

Floods and Flood Control

Field, J.E. How big was the flood? Engin. Bul. 24(6):4, 20-21. July 1940. L.C.

An article about the Cherry Creek flood of June 20, 1864.

Field, J.E. Rising waters. Engin. Bul. 24(9):6-7, 21. Sept. 1940. L.C.
Discusses various Cherry Creek floods.

Finley, W.L. Willamette valley project. Amer. Wildlife 30(2):91-94. Mar./Apr. 1941. 412.9 Am32

Advantages and disadvantages of the Willamette valley flood control project are discussed.

Flood waters from burned areas [in California] carry high silt content. South. Calif. Conserv. Assoc., Conserv. Activ. 9(1):5. Jan. 1941. 279.9 C763

Great Ouse flood protection. No. 1. Engin. [London] 171(4443):159-161, illus. Mar. 7, 1941. L.C.

Abstract of report issued by Sir Murdoch MacDonald and Partners to the River Great Ouse Catchment Board of England.

To be continued.

Johnston, J.F. The significance of foothill and valley areas with respect to flood control. South. Calif. Conserv. Assoc. Conserv. Activ. 8(12):9. Dec. 1940. 279.9 C763

Meyer, O.H. Simplified flood routing. Civ. Engin. 11(5):306-307, illus. May 1941. 290.8 C49

Describes method recently developed and now in use in several offices of the U.S. Engineer Department.

Flow

Colebatch, G.T. Model tests on Liawence canal roughness coefficients. Jour. Inst. Engin. Australia 13(2):27-32, illus. Feb. 1941. L.C.

"Bibliography," p. 32

"In this paper a description of model tests carried out to determine the equivalent roughness coefficient in open channels, in which the roughness differs on sides and bed, is given. A formula is developed and presented as a nomograph, the accuracy of which is believed to be sufficient for practical purposes."

Derron, E. Les débits provoqués par les pluies dans les réseaux d'égouts et leur détermination sur la base d'une manière spéciale de considérer le processus d'écoulement. (Discharges of rain water in drainage system and its determination on basis of a special method of considering flow process.) Strasse und Verkehr 27(3):31-39. Feb. 7, 1941; 27(4):45-54. Feb. 21, 1941. Pub. Rds. Libr.

In French.

Haley, J.M. and Lewis, M.R. Tests on open-channel flow. Civ. Engin. 11(5):312, illus. May 1941. 290.8 C49

Letter to the editor regarding the paper, "On the Four Regimes of Open-Channel Flow," by Messrs. Robertson and Rouse in the March 1941 issue of Civil Engineering.

Hannan, Frank. Flow of liquid through porous media. Amer. Waterworks Assoc. Jour. 32(11):1954-1957, illus. Nov. 1940. 292.9 Am32J

Review of Lindquist, E.G.W. Flow of liquid through porous media. Teknisk Tidskrift, Uppl. E. (Sweden) 70:49. Apr. 1940.

Kalinske, A.A. and Robertson, J.M. Turbulence in open channel flow. Engin. News-Rec. 126(15):539-541, illus. Apr. 10, 1941. 290.8 En34

"Laboratory experiments which provided a means of direct quantitative measurement of turbulence diffusion reveal new information on sediment transportation in streams. The following discussion outlines the general theory of diffusion in turbulent flow, describes the manner in which the measurements were made, and shows how the results can be used to practical advantage."

Ray, Manohar. On turbulent liquid motion outside a circular boundary. London, Edinb. and Dublin Phil. Mag. and Jour. Sci. 28(187):231-240, illus. Aug. 1939; 31(205):144-155, illus. Feb. 1941. 472 P54

"References," p. 240.

Stevens, J.C. Nomenclature for "four regimes of open-channel flow".
Civ.Engin.11(5):311. May 1941. 290.8 C49

Letter to the editor regarding the "four regimes of open-channel flow," referred to in the article by Messrs. Robertson and Rouse in the March 1941 issue of Civil Engineering.

Forests and Forestry

Bernadini, Ferruccio. L'azione della foresta sulle piogge e sul regime delle acque. (Effect of the forest on rainfall and streamflow.) Riv. Forest Ital.2(10):475-480, illus. Oct.1940. 99.8 R522

In Italian.

Abs.Biol.Abs.15(5):873. May 1941.

Frank, Bernard. Headwater highways - a new forest menace. Jour.Forestry 39(3):291-296. Mar.1941. 99.8 F768

Literature cited, p.296.

The writer contends that "improper or unjustified road construction in forest areas has filled reservoirs, destroyed water-spreading grounds and irrigation works, choked stream channels, wiped out recreation sites, depreciated farm lands and urban properties, ruined fishing in hundreds of miles of mountain streams, and seriously impaired priceless scenic resources."

Grasses and Grassland

Carlson, Neil. Grass for burned-over areas. Country Gent.111(4):33, illus. Apr.1941. 6 C833

"Best success will follow if seeding is done shortly after the fire, before weeds and shrubs gain too strong a foothold."

"After the severe fire of '39, near Spirit Lake, Idaho, a number of experimental plantings were made. Grasses that were looking especially good in the fall of '40 included big bluegrass, beardless wheat grass, thickspike wheat grass, dwarf crested wheat, and orchard grass. In all likelihood, some of these will be used extensively in the future as seed supply becomes more plentiful."

Graham, Michael. Elliot's farming experiment. Country Life[London] 89(2303):xxx,xxxii, illus. Mar.8, 1941. 80 C83

Concerns the views of Robert Henry Elliot who contended that "the success of agriculture depends on the cheapening of production; that the cheapest food for stock is grass; and that the cheapest manure for soil is turf. Those arguments lead to alternation of grass and plough, which is lea-farming."

The green grass grows all around. Lawns, parks, road shoulders, airports, and fairways are all fields for better grass. Fort.Rev.16(1):12,14, illus. Jan./Feb.Mar.1941. 57.8 F414

"It is said that there are 10,000,000 acres in highway shoulders and intersections. For economy, appearance, and prevention of erosion much of this area should receive plantfood. Even railway right-of-way maintenance

officials are becoming interested for the same reasons.

"Other potential outlets are on levies, dams, and terraces built for flood control. Here a quick covering of grass is necessary to hold the soil. A small but new use under the defense program is in the establishment of airplane landing fields and construction of good, thick turf around training camps."

Hungry grasslands. Fert. Rev. 16(1):10-11, 14, illus. Jan./Feb. Mar. 1941. 57.8 F414

"Millions of acres of pasture land can be made profitable by plant-food and proper management. Much work has been done in pasture improvement in recent years. There is much more to do." Cites soil conservation values.

"Referring to hungry pastures, C. R. Enlow, Chief, Division of Agronomy, Soil Conservation Service, says, 'We already have many millions of acres of 'permanent' pasture that are practically worthless in their present condition because of soil impoverishment, overstocking or both; and the land is actually deteriorating.'"

Lord, Russell. New ways to serve grass; an end to dust on macadam; a practical bulletin. Country Life [Garden City, N.Y.] 79(2):44-45, illus. Dec. 1940. 80 C832

Describes the "all-grass system of culture" on Cockade Farm, in Harford County, Md.; effects of soil conserving practices on Priest river road conditions near Churchville, Md.

Vries, D. M. de. Over den invloed van strenge koude op de graszode. (Influence of vigorous cold on turf.) Landbouwk. Tijdschr. 52(637/638): 320-329. May/June 1940. 105.2 Or3

"A sudden severe frost without snow cover in Dec. 1938 after a mild autumn changed the botanical composition of grass land in the southern parts of Holland. The % of grass fell from 96 to 82 in pasture land and from 94 to 84 in hay fields. Weeds increased from 3% to 11% and from 5% to 16% respectively. Lolium perenne and Holcus lanatus were to an important degree replaced by Phleum pratense, Bromus mollis and Poa trivialis." - I. Rietsema. Abs. Biol. Abs. 15(5):876. May 1941.

Weaver, R. J. Water usage of certain native grasses in prairie and pasture. Ecology 22(2):175-192, illus. Apr. 1941. 410 Ec7

By using phytometers, water losses by transpiration and surface soil evaporation were determined at Lincoln, Nebraska for seven species of prairie and pasture grasses in closely adjacent prairie and pasture habitats during their period of growth in 1939. The grasses grown were Andropogon furcatus, Andropogon scoparius, Bouteloua curtipendula, Bouteloua gracilis, Sporobolus cryptandrus, Poa pratensis and Agropyron smithii.

Ground Water

Hubbert, M. K. The theory of ground-water motion. A reply. Jour. Geol. 49(3):327-330. Apr./May 1941. 403 J82

Reply to criticism by H. Krutter entitled, Discussion. The theory of ground water motion. Jour. Geol. 49(3):324-326. Apr./May 1941.

Krutter, H. Discussion: the theory of ground-water motion. Jour. Geol. 49(3):324-326. Apr./May 1941. 403 J82
Discussion is based on an article, The theory of ground-water motion, by M. King Hubbert, published as Part I of the Nov./Dec. 1940 issue of Journal of Geology.

Lugn, A. L. Ground water worth millions. Nebr. Farmer 83(4):3, 12, illus. Feb. 22, 1941; 83(5):12-13, 26-27, illus. Mar. 8, 1941. 6 N27
"Surveys indicate there is plenty of underground water in [Nevada] to make pump irrigation possible and profitable on a large scale."

Human Welfare

Hurd, Anthony. Are we robbing the land? Country Life [London] 89(2306): 284. Mar. 29, 1941. 80 C83
Review of "Soil and sense," by Michael Graham, a book giving "sound advice" on "responsibility to the land" as "the key to farming prosperity."

Melvin, B. L. Man's relation to the land. School Sci. and Math. 41(357): 359-369. Apr. 1941. 470 Sch64
Paper read at the Ecological Section, American Association for the Advancement of Science, Dec. 27, 1940.

Shantz, H. L. The relation of plant ecology to human welfare. Ecol. Monog. 10(3):[311]-[342], illus. July 1940. 410 Ec72
"References and selected readings," pp. 328-329.

Thorntwaite, C. W. The relation of geography to human ecology. Ecol. Monog. 10(3):343-348. July 1940. 410 Ec72
"An example is selected to show the sort of contribution which geography can make to the science of human ecology, with particular reference to the conservation of soil. The history of the earth is traced through its early stages of development to the appearance of primitive forms of plant life and to the ultimate formation of a vegetative cover under suitable conditions, with a marked reduction in soil loss and run-off. The amount of destruction differed greatly in humid and arid lands. Into this 'ecology developed by nature' came the 'ecology of man's agriculture', entailing the removal of vegetation and exposing the soil for periods of the year, as was the case 'in the ages before the advent of plants'. This once more leads to erosion. The 'four erosion periods' in the earth's history are outlined. In the fourth and present period, it is too often overlooked that soil is an end product of developmental process which proceed much more slowly than the present processes of destruction. 'It is not likely that soil science will be able to devise means of speeding the process of regeneration to any appreciable degree.' Abs. Imp. Bur. Pastures and Forage Crops, Herbage Abs. 10(4):356. Dec. 1940.

Humus

Jacks, G. V. Humus and the farmer. Roy. Soc. Arts Jour. 89(4582):229-244, illus. Mar. 7, 1941. 501 L847J

Hydraulics and Hydrology

Alldis, V.R. Problems of land usage in Australia; the hydrologic factor. Past.Rev.50(11):992-993. Nov.16,1940. 23 Au75

"Irrigationist." The hydrologic factor. Past.Rev.51(1):32. Jan. 16,1941. 23 Au75

Letter to the editor supporting the article by V.R.Alldis in the November 1940 issue of Pastoral Review regarding the importance of the hydrologic factor in Australia.

Infiltration

Sharp, A.L. Preliminary results of infiltration studies. U.S. Soil Conserv.Serv.South.Great Plains Messenger, Mar.15,1941, pp[24]-[30]. 19606 So32

Preliminary report on studies on Watershed W-III, the Blaney farm, Black Squirrel Creek project, Colorado Springs, Colorado.

Summary: "The data obtained to date on Watershed W-III are inadequate for drawing any definite conclusions. The findings thus far, however, indicate, tentatively, that on Watershed W-III:

"Infiltration rates may be increased by improving stands and growth of vegetative cover.

"Infiltration rates may be somewhat higher in winter than in summer, opportunities of infiltration being the same.

"Infiltration rates of the brecker soil type decrease very rapidly to a rate of ground .20"/hr in summer, and approximately .28"/hr in winter, during the early part of storms. Little changes occur thereafter during long rainstorms, or during successive storms."

Irrigation and Drainage

Carter, Keith. Pump irrigation district argued by Clay County [Nebraska] farmers. Nebr.Farmer 83(1):6,18, illus. Jan.11,1941. 6 N27

Christiansen, J.E. Hydraulics of sprinkling systems for irrigation. Amer.Soc.Civ.Engin.Proc.67(1):107-128, illus. Jan.1941. 290.9 Am3P

"Portable systems for sprinkling agricultural crops were first used in the Sacramento Valley of California in 1931, although in 1930 there were a few scattered installations in the southern part of the state. Sprinkling with stationary systems had been confined largely to citrus orchards and truck crops because of the relatively high investment required. Low-cost portable systems, however, made sprinkling a feasible method of irrigating large acreages of field crops such as beans, peas, onions, and sugar beets.

"In 1932 the Division of Irrigation of the University of California began a study of sprinkling, principally to determine (1) the hydraulic characteristics of rotating sprinklers, (2) the loss of water by evaporation, (3) the hydraulic characteristics of sprinkler lines, (4) the cost of applying water by sprinkling and (5) the general success of sprinkling as a method of irrigation. The scope of this paper is defined by the first three of these items."

Christiansen, J.E. The uniformity of application of water by sprinkler systems. Agr.Engin.22(3):89-92,illus. Mar.1941. 58.8 Ag83

Dominy, J.N. Land drainage:the present position[in England] Country Life[London]89(2300):18,illus. Feb.15,1941. 80 C83

Doneen, L.D. Studies in the irrigation of sugar beets. Pacific Rural Press and Calif.Farmer 141(8):307. Apr.19,1941. 6 P112

Harker, D.H. Controlled drainage. Agr.Engin.22(4):139-142,illus. Apr.1941. 58.8 Ag83

The author states that controlled drainage "is exactly what the name implies, the control or regulation of the taking away, or drainage, of hydrostatic water from the soil." He further states the difference between subirrigation and controlled drainage and cites some examples of control in Indiana.

Higbee, E.C. Watering Mexico's deserts. U.S.Off.Foreign Agr.Relat. Agr.in the Amer.1(4):11-14,illus. May 1941. 1 F752A

Irrigation projects in Mexico, under the direction of the Comision Nacional de Irrigacion are not only bringing gradual modernization of agriculture and improvement of rural life but are providing the foundation of new industries in regions of potential wealth.

Hinderlider, M.C. Multiple-use water projects. Civ.Engin.11(5):310. May 1941. 290.8 C49

Letter to the editor regarding paper by E.D.Dobler on "Multiple-use aspects of irrigation projects," in February 1941 Civil Engineering.

Holland, A.H. Suggestions for irrigation of beans in the Salinas Valley [Calif.] Pacific Rural Press and Calif.Farmer 141(8):299. Apr.19, 1941. 6 P112

Israelson, O.W. Efficiencies in irrigation. Utah Farmer 60(13):3,9, illus. Feb.25,1941. 6 D45

Discusses water-conveyance efficiency; water-application efficiency; irrigation efficiencies; effects of low irrigation efficiencies; conservation of water; prevention of soil leaching; erosion control; solution of the alkali problem; irrigation and drainage research continuously necessary; water conveyance efficiency studies; water-application-efficiency studies; drainage of irrigated lands; and permanent and dependable water rights.

Ketchum, C.C. Silt canal lining saves irrigation water. U.S.Bur. Reclam., Reclam.Bra 31(4):114-115, 126-127, illus. Apr.1941. 156.84 R24

Nery, J.M. A irrigação no mundo e no Brasil. (Irrigation in the world and in Brazil.) Ceres[Rio de Janeiro]2(7):[3]-39, illus. July/Aug. 1940. 9.2 C332

"Bibliografia," p.39.

In Portuguese, with English summary.

This paper summarizes data relative to irrigation systems existent in various countries and cites examples of remarkable results.

attributable to irrigation practices.

"A study of the national situation as related to the hydrological regime demonstrates the urgent necessity for irrigation of Brazilian lands.

"A project in water management, recently developed at the Minas Gerais State University of Agriculture and Veterinary Sciences, Vicosá, is presented in complementary form.

"In view of the present hydrological situation, it is useless to hope for a more convenient distribution of precipitation in the near future. The only solution is the installation of irrigation equipment, to provide necessary water during the periodic droughts and Indian summer. With the aid of irrigation, man can harness the land, with compensatory results.

"Fertile irrigation not only insures extraordinary growth, but also makes possible cultivation of the land during all seasons of the year, with corresponding economic benefits.

"The Brazilian farmer must not expect governmental forces to alleviate this entire situation. He, with his own interests in view, should begin irrigation of his fields, not forgetting however, that such a project is a technical undertaking, initially expensive but highly compensatory."

Peterson, A.W. Share of irrigated crops. Nebr. Farmer 83(7):11. Apr. 5, 1941. 6 N27

Type of leases found to be in effect between landlord and tenant in Buffalo county, Nebraska as a result of recent study of irrigated farms.

Ridiger, V.R. Subsoil irrigation by means of mole drains. Pedology no. 2, pp. 23-30. 1940. 57.8 P34
In Russian.

"Mole drainage as a method of irrigating cotton soils is said to be superior to other methods of irrigation. A special method of mole drainage is suggested for the reclamation primarily of peat soils, but also of mineral soils." Abs. Imp. Bur. Soil Sci., Soils and Fert. 3(6): 263. 1940.

Sahni, P.N. The relation of drainage to rainfall and other meteorological factors. Jour. Agr. Sci. [England] 31(1):[110]-115, illus. Jan. 1941. 10 J822

"References," p. 115.

Samuelson, Walt. Nebraska takes a chance. West. Farm Life 43(9):3, 6, 21, illus. May 1, 1941. 6 R153

Nebraska is expecting solution of fundamental problems of irrigation water and power by the construction of three hydroelectric districts, including the Platte Valley, the Loup river, and the Central Nebraska public power and irrigation district. Brief mention is made of the dams involved, particularly the Kingsley, as well as costs.

Staebner, F.E. Aids to judgment in irrigation. Agr. Engin. 22(4):129-131, 136, illus. Apr. 1941. 58.8 Aq83

"A paper presented at a joint session of the Rural Electric and Soil and Water Conservation Divisions at the fall meeting of the American Society of Agricultural Engineers at Chicago, Ill., Dec. 5, 1940."

This is a discussion of various irrigation need indicators including

the atmometer, the moisture availometer, pressure and tension indicators, electrical resistance ground-water meter and finally a map prepared in the U.S. Dept. of Agriculture indicating the relative need for irrigation in different localities of the eastern humid section of the United States. The map is shown on p.130.

Stefanon, Roberto. Un esempio di irrigazione con sollevamento meccanico dell'acqua nel sottosuolo. (An example of irrigation by mechanically lifting of water from subsoil) [Italy] Min. dei Lav. Pub. Ann. 77(8): 855-877, illus. Aug. 1939. 290.9 It1
In Italian.

Willard, E.V. The story of Thief Lake. A study in restoration. Minn. Dept. Conserv. Conserv. Volunteer 2(7):5-10. Apr. 1941. 279.8 C765
"The amazing history of Minnesota's greatest drainage project and its subsequent restoration."

Kudzu

Rankin, F.A. Its value as livestock feed and as an erosion control crop entitles kudzu to be known as the magic vine. South. Agr. 71(3): 24-25, illus. Mar. 1941. 6 S83

Land Management and Utilization

Altermatt, C.M. Land utilization in the Banister River drainage area. Va. Farm Econ. no. 38, pp. 596-604, illus., May 1937. 275.29 V813

Becker, Oscar. Publicly owned land and its implications. Dakota Farmer 60(22):460-461. Nov. 16, 1940. 6 D14
Depicts a condition of public land ownership in North Dakota and specific recommendations for action.

Beeler, M.N. Sometimes there are bargains in poor land. Furrow 46: 4, 11, illus. Mar./Apr. 1941. 6 F98
Cites some examples of bargain farms in the various states taken over by men well-versed on soils and land utilization who made them pay.

Grant, H.C. Practical difficulties in the development of a scientific land policy: Manitoba. Sci. Agr. 21(7):395-401. Mar. 1941. 7 Sci2

L, R. A matter of time. Our history as to land and tenure, considered in terms of a four-minute moving picture. The Land 1(1):76-80. Winter issue, 1941. 279.8 L22

McGinnis, B.W. History of land use on the Southern Great Plains. U.S. Soil Conserv. Serv. Reg. 6 South. Great Plains Messenger, Apr. 15, 1941, pp. [3]-[5]. 1.96 S839H

McIntyre, E.R. Facing frontiers here at home. Surveys worked out in Wisconsin land use planning. Wis. Agr. and Farmer 68(6):[1], 16-17, illus. Mar. 22, 1941. 6 W751
Summarizes parts of the county planning reports finished in two Wisconsin counties, Kenosha and Barron.

Maes, E.E. The world and the people of Cundiyo. U.S. Bur. Agr. Econ., Land Policy Rev. 4(3):8-14, illus. Mar. 1941. 1 Ec7La

Describes the USDA program in Cundiyo, New Mexico which has "the twofold objective of increasing the grazing resource available to the village people and increasing the productivity of the irrigated agricultural lands that they had always retained."

Sawyer, L.E. A Minnesota land use program. Two developments show the way. Minn. Dept. Conserv., Conserv. Volunteer 2(8):71-73. May 1941. 279.8 C765

"The Beltrami and Pine Island land use projects are national models of planning."

Slipher, J.A. Measuring the effect of soil management practices upon the productivity of farm land. Jour. Amer. Soc. Farm Mgrs. and Rural Appraisers 5(1):8-14. Apr. 1941. 281.3 Am32

"Presented before the Annual Meeting of the American Society of Farm Managers and Rural Appraisers, December 3, 1940, LaSalle Hotel, Chicago, Illinois."

"The term 'productivity' refers to the collective capacity of the soil to produce. It is not in any sense to be confused with the traditional term 'fertility' which has only a fractional meaning. The two are in no sense synonymous."

Smith, N.L. and Norton, L.J. Factors influencing land use in Vermilion County [Illinois] Ill. Farm Econ. no. 70, pp. 492-495. Mar. 1941. 275.23 Il5

"From this study (1) soil quality as associated with topography, (2) type of tenure, and (3) the AAA program were more important in influencing differences in land use among farms in Vermilion county in the period studied than was the size of debt burden."

"The farms on the more fertile soil and the more level topography had a larger percent of their land in cropland, a higher percent of that cropland in the various soil-depleting crops, a lower percent in crops not harvested, and a lower percent in hay and rotation pasture. Farms on the more rolling topography followed a somewhat less intensive system of farming than did those on the more level land."

"The tenant-operated farms were definitely cropped more heavily than were the owner-operated ones. This situation reflects the greater pressure for tenant-operated farms to intensify. The tenant desires more high-profit crops in order to meet his farm and family expenses and to earn a surplus, and the landlord wants a satisfactory rent."

"The farms which were carrying the highest debt burden tended to have a larger proportion of their cropland in the more intensive higher profit crops, such as corn and soybeans, and a somewhat lower percent of their cropland in oats and wheat, crops not harvested, and hay and rotation pasture. This was especially true for the tenant-operated farms. In some cases, the farms with the highest debt ratios tended to

have more soil-depleting crops; but, in most cases, the proportion of cropland in these crops was so high (up to 97.1 percent in 1935) that there was little room for an increase. Therefore, the desire to obtain more money from crop production had to be accomplished by shifting from one crop to another rather than by increasing the total acreage.

"On cooperating farms, the AAA program has resulted in a decrease in the percent of cropland in soil-depleting crops and an increase in the proportion devoted to the production of legumes and other soil-conserving crops."

Legumes

Cates, J.S. A puzzling new legume. The lotus plant performs amazingly well in some areas and fails dismally in others - but the scientists work on. Country Gent. 111(4):13, 75, illus. Apr. 1941. 6 C833

According to this article, the lotus, birds-foot trefoil, has had "an astonishing success as a poor-soil legume in New York state and offers some promise in Oregon."

Lespedeza

Smith, G.E. The effect of photo-period on the growth of lespedeza. Amer. Soc. Agron. Jour. 33(3):231-236, illus. Mar. 1941. 4 Am34P
"Literature cited," p. 236.

Moisture

Allyn, R. F. and Work, R. A. The availameter and its use in soil moisture control: I. The instrument and its use. Soil Sci. 51(4):307-319, illus. Apr. 1941. 56.8 So3

"References," pp. 318-319.

"Orchard irrigation studies at Modford have shown knowledge of soil moisture conditions to be important in the timing of irrigation. A device called the 'availameter' has been developed for use by orchardists and others in making direct field soil moisture determinations without expensive laboratory equipment. This instrument measures the plasticity or stability of a soil core obtained with the soil tube. A close relationship between this measurement and the corresponding moisture content has been found.

"The use of soil stability measurement as a direct measure of available soil moisture is shown. A simple method of determining the available soil moisture range and soil moisture available to plant use at any time is also presented.

"The availameter was not tried on light soils, but it is not considered adaptable to soils which fail to give cohesive soil tube cores; therefore its use may be limited to medium or heavy soil types."

Browning, G. M. and Milam, F. M. A comparison of the Briggs-McLane and the Goldbeck-Jackson centrifuge methods for determining the moisture equivalent of soils. Soil Sci. 51(4):273-278, illus. Apr. 1941. 56.8 So3
"References," pp. 277-278.

Duley, F.L. Possible effects of improved moisture conservation practices upon the productivity and value of land. Amer.Soc.Farm Mgrs.and Rural Appraisers Jour.5(1):39-52,illus. Apr.1941. 281.8 Am32
"Talk delivered at Annual Meeting of the American Society of Farm Managers and Rural Appraisers, LaSalle Hotel, Chicago, December 3, 1940."

Gritsenko, I.F. The effect of various windbreaks on soil moisture. Pedology no.3, pp.24-38. 1940. 57.8 P34
In Russian, with German summary.

"The effect of windbreaks in increasing the soil moisture was particularly noticeable within 50-150 metres of the strips. The effect varies with the seasons, attaining its maximum in the spring." Abs. Imp.Bur.Soil Sci., Soils and Fert.4(1):45. 1941.

Huberty, M.R. Some soil moisture problems associated with high rainfall. Pacific Rural Press and Calif.Farmer 141(8):294. Apr.19, 1941. 6 P112

Thorntwaite, C.W. and Owen, J.C. A dew-point recorder for measuring atmospheric moisture. U.S.Monthly Weather Rev.68(11):315-318, illus. Nov.1940. 1 W37M

Orchard Management

Dunbar, C.O. Peach orchard soil management. Ill.State Hort.Soc., Ill. Hort.30(2):[5]-[8]. Apr.1941. 80 IL66

The author, who is associated with the Pennsylvania Agricultural experiment station, indicates that "cover crops by improving the permeability of the soil have great value in catching the rain and preventing run-off but after the rain is over we must be sure that these same covers do not use up too much of this water. A great deal of research is needed to determine which cover crops use the most or the least water.

"There are several methods of approach to this problem. Some of them are:

(1) Using cover crops which make most of their growth in the fall or early spring when the trees need for moisture and nitrogen appear to be at a minimum, in this case delaying the first spring cultivation until as late as possible in order to get the maximum amount of cover, to reduce the period of cultivation to a minimum and yet stimulate late terminal growth. Used in this manner a mixture of crimson clover and winter vetch with millet as a nurse crop worked well in Southern Pennsylvania this year.

(2) Growing cover crops such as brome grasses which slow down their growth during hot weather or perhaps using smaller types of cover crop plants such as Korean Lespedeza or Kent Wild White Clover. While no evidence is available, these smaller growing cover crops should not use as much soil moisture as large rank growing covers.

(3) Growing a more or less permanent cover crop the growth of which may be slowed up by light disking to be repeated perhaps two or three times during the season. It is not yet certain just what cover crops will stand two or three light diskings and survive but in 1940 a mixture of Ladino Clover and orchard grass stood this treatment well. Several more years' experience will be necessary to determine this and

also whether or not tree growth will be maintained. In all cases discings must be made BEFORE tree growth slows up. Otherwise neither discings nor any other treatment will cause the trees to resume vigorous growth with proper sizing of the fruit. It takes keen foresight to judge when to destroy or to diminish cover crop growth."

Gourley, J.H. The case for cover crops in the orchard. Amer. Fruit Grower 61(3):[7], 19-20, 31, 35, illus. Mar. 1941. 80 G85

Johnston, J.C. and Ahlson, C.B. Cover crops for erosion control in citrus orchards. Pacific Rural Press and Calif. Farmer 141(8):308-309. Apr. 19, 1941. 6 P112

Johnston, J.C. and Ahlson, C.B. Erosion control by cover crops. Calif. Citrogr. 26(6):152, 181, illus. Apr. 1941. 80 C125

"This discussion deals with two systems of cover cropping [in orchards] primarily from the standpoint of erosion control. These systems are:

I. Annual winter cover crop with summer tillage.

II. Continuous cover crop (which is essentially a winter cover crop with no tillage).

"In addition, the question of the possible use of permanent cover crops is discussed."

Johnston, J.C. On citrus irrigation practices. Pacific Rural Press and Calif. Farmer 141(8):309. Apr. 19, 1941. 6 P112

"Editor's Note: This article is briefed from a talk given at the Citrus Institute at San Bernardino."

Sudds, R.H. Infiltration and our orchard soils. Mountaineer Grower 12(128):43-47, 49. Mar. 1941. 80 M86

Report on work conducted in association with Dr. G.M. Browning, Office of research, Soil Conservation Service, Morgantown, W. Va.

Table 1. The effect of cultivation and mulching on the infiltration rate; Table 2. The effect of soil management on the infiltration rate.

"This paper reports the effect of cultivation, past and relatively recent, and of surface mulches on certain properties of orchard soils in the Eastern Panhandle of West Virginia as they affect the infiltration rate.

"Compared with an undisturbed sod cover, cultivation has reduced materially the organic-matter content, the percentage of the larger-sized soil aggregates, and the infiltration rate. Cultivation has tended to compact the soil and to increase the erodibility.

"Straw mulch, by protecting the surface from the dispersing action of the water from the infiltrometer nozzles as it fell on the soil, maintained or materially increased the infiltration rate over that of the cultivated areas. Comparable protection would be afforded against beating rains.

"The report emphasizes the importance of protecting the soil surface with adequate vegetation or with ample organic mulches as they are related to the conservation of water and soil, both of which are highly essential to successful orcharding in the Cumberland-Shenandoah Region.

"In the absence of a considerable degree of mechanical compaction

orchards which have been in sod continuously have automatically maintained favorable soil conditions which are conducive to the rapid infiltration of water with little, if any, loss of soil.

"In marked contrast, cultivation tends to deplete the fertility of the soil and is likely to be destructive of its desirable physical properties, thus increasing the susceptibility of the orchard site to losses of water and of soil and the liability of the trees and their crop to injury by drouth. The mower should be substituted more often for the disk in the orchard."

Rainfall and Precipitation

Denison, F.N. A report on the difference between the precipitation records as taken on the standard Canadian and United States rain-gauges. Amer. Met. Soc. Bul. 22(2):65-67, illus. Feb. 1941. 340.8 Am32

"This describes a comparison of rainfall observations as taken at the Victoria College on the Canadian standard rain gauge of 3.57 inch diameter, and the standard U.S. 8 inch gauge, and a similar comparison made at Seattle Weather Bureau. The results appear to show that the small gauge records more rainfall than the larger gauge, but the difference is less during windy weather. No cause for this difference is given at the present time. It is also pointed out that the cedar stick causes a displacement of .01 inch per inch in the 8 inch gauge."

Grant, E.L. Reliability of station-year rainfall-frequency determinations. Amer. Soc. Civ. Engin. Proc. 67(4):665-666. Apr. 1941. 290.9 Am3P

Discussion of paper by Katharine Clarke-Hafstad published in November, 1940, Proceedings.

Hodges, P.V. Reliability of station-year rainfall frequency determinations. Amer. Soc. Civ. Engin. Proc. 67(1):129-132, illus. Jan 1941. 290.9 Am3P

Discussion of paper by Katharine Clarke-Hafstad, published in November, 1940, Proceedings.

McIllwraith, J.F. Prediction of the maximum rainfall intensity equation. Commonwealth Engin. 28(5):148-156, illus. Dec. 2, 1940. Pub. Roads Libr. "Bibliography," p. 156.

By analyzing the factors influencing rainfall intensities, the author derives "a reasonably accurate equation" for predicting rainfall intensity of any area.

Rouse, H.K. An ice storm in Texas. U.S. Soil Conserv. Serv., Soil Conserv. 6(10):241-242, 248, illus. Apr. 1941. 1.6 So3S

Describes conditions preceding, during, and after the ice storm of November 23 and 24, 1940, centering around Amarillo, Texas; also gives records obtained on three nearby watersheds.

Range and Pasture Management

Canfield, R.H. Application of the line interception method in sampling range vegetation. Jour. Forestry 39(4):388-394, illus. Apr 1941. 99.8 F768

"The line interception method as herein described is designed for measuring density and composition of herbaceous vegetation and shrubs. It

is based primarily on the line transect. However, it incorporates a new technique for obtaining an inventory of the vegetation by line measurement of individual plants on a randomly selected sample. It appears to offer a practical, rapid and statistically sound means for sampling vegetation on both large and small range areas, as well as on small plots used in detailed and intensive studies. Field tests have demonstrated that subjective influences are largely eliminated as factors affecting inventories so obtained. The method while primarily developed for range studies should also serve equally well to measure minor vegetation and stands of reproduction in forests."

Costello, D.F. and Turner, G.T. Vegetation changes following exclusion of livestock from grazed ranges. Jour. Forestry 39(3):310-315, illus. Mar. 1941. 99.8 F768

Mark, F.A. and Roaf, J.R. Range seeding by airplane [in Idaho] U.S. Soil Conserv. Serv., Soil Conserv. 6(10):270, 272, illus. Apr. 1941. 1.6 So3S

Reid, E.H. Plant succession on subalpine grasslands as affected by livestock management. Northwest. Sci. 15(1):3-5. Feb. 1941. 470 N81
"Literature cited," p. 5.

Stewart, George. Historic records bearing on agricultural and grazing ecology in Utah. Jour. Forestry 39(4):362-375, illus. Apr. 1941. 99.8 F768
"Literature cited," pp. 374-375.

A summary of facts obtained from records maintained by the Mormon church and from various surveys of government parties.

Swift, L.W. Some criteria for determining proper forage utilization by big game on winter ranges. Jour. Mammal. 22(1):47-53. Feb. 1941. 410 J823

"Comment on instances of overpopulation and depletion of environments. Winter range is usually the limiting factor. Methods of determining over-use are discussed and 4 criteria of overbrowsing are described and annotated. For determining initial stages of deterioration in big game winter range, the author's suggestions are: (1) Locate the key areas, where game naturally concentrate or are concentrated during the severest part of the winter; (2) determine the key species [of plants], that is, the common and preferred species in the key area. Observe the degree of utilization, assuming that one-half use of annual growth in length on shrubs and one-half volume of perennial grasses is the most desirable; (3) observe the soil condition closely, to check on the first signs of advanced erosion as indicated by loss of surface soil through sheet erosion." Abs. U.S. Fish and Wildlife Serv., Wildlife Rev. no. 30, p. 33, Mar. 1941.

Regionalism

Robertson, C.J. Some administrative aspects of regionalism. Pub. Admin. [London] 19(4):11-23. Jan. 1941. 280.8 P963

Reservoirs

Bowden, N.W. Multiple-purpose reservoir operation. Part I. In single or independent units. Civ. Engin. 11(5):292-293, illus. May 1941. 290.8 C49

Currie, Herbert. An efficient, economical farm reservoir. Pacific Rural Press and Calif. Farmer 141(8):301, illus. Apr. 19, 1941. 6 Pl12
"At a cost of around \$1250, C.M. Morelli [Marin co. Calif. dairyman] has thrown up a thick bank of earth across a small creek that drains the nearby watershed before it meanders through his place. At present he has about $8\frac{1}{2}$ acre feet or approximately 2,500,000 gallons of water stored in his 'backyard'."

Dalrymple, Tate. Measuring Ohio's rivers. Action of flood detention reservoir. Ohio State Univ. Engin. Expt. Sta. News 13(1):25-26, illus. Feb. 1941. 290.9 Oh3En

Indicates action of reservoirs constructed by Miami Conservancy District as illustrated by passage of the flood of June 1939 through Englewood Reservoir.

Morris, R.H. and Reilly, T.L. Operation experiences, Tygart reservoir. Amer. Soc. Civ. Engin. Proc. 67(4):569-593, illus. Apr. 1941. 290.9 Am3P

"Some of the problems involved in the operation of a large flood-control and water-supply project are reported in this paper. The writers demonstrate how effectively the Tygart Dam can perform the functions for which it was planned. For example, the effect of the reservoir in reducing flood crests at downstream points is demonstrated. The accuracy of these estimates is dependent on the method of flood routing and the thoroughness with which it is consummated. The elements involved in routing these floods are described only briefly because a complex problem of this type would require a separate paper for complete presentation."

Run-off

Horner, W.W. and Jens, S.W. Surface runoff determination from rainfall without using coefficients. Amer. Soc. Civ. Engin. Proc. 67(4):533-568, illus. Apr. 1941. 290.9 Am3P

"In this paper the writers call attention to the recent improvement in hydrologic data with respect to precipitation and stream flow, and to the information with respect to infiltration that has developed from the research program of the U.S. Department of Agriculture; and they outline a method of applying this information to the evaluation of surface runoff from precipitation data without the use of a coefficient. The method is presented as being generally applicable to all drainage basins, and is described in detail as it would be used in urban storm drainage."

Inglis, C.C. Comparison of runoff records in India and America. Civ. Engin. 11(4):241, illus. Apr. 1941. 290.8 C49
Letter to the Editor.

Kharitonov, G.A. Technique of laying-out run-off plots for measuring soil erosion. Pedology no.2, pp.78-84. 1940. 57.8 P34
In Russian.

Sedimentation and Silt

Churchill, M.A. Interpretation of tests on silt samplers. Civ.Engin. 11(5):310. May 1941. 290.8 C49

Letter to the editor regarding article by D.S.Jenkins on "Silt samplers compared in special tests," in January 1941 Civil Engineering.

Einstein, H.A. Formulas for the transportation of bed load. Amer.Soc. Civ.Engin.Proc.67(3):351-367, illus. Mar.1941. 290.9 Am3P

Frye, J.C. Some small scale natural levees in a semi-arid region. Jour. Geomorph.4(2):133-137, illus. Apr.1941. 331.8 J82

"During the seasons of 1939 and 1940 the writer was engaged in a study of the geology and groundwater resources of Meade County, southwestern Kansas. In the course of this investigation the writer studied the natural levees along Crooked Creek, and made some observations of similar levees along White-woman Creek in Scott County, and Bear Creek in Stanton County. The levees along Crooked Creek have been mentioned briefly but have not been adequately described...

"In the opinion of the writer the persistent covering of grass on the levees acts as a trap that catches and holds a part of the suspended load carried in the lower two or three inches of water, and also catches the part of the bed load which, under unusual conditions, may reach the crest of the levee. Thus a large percentage of the sediment carried by flood water leaving the channel is trapped in the first few feet of lateral movement, and so produces narrow levees with steep back slopes. This sort of trap also would be effective in nearly obliterating all traces of bedding in the resultant deposit.

"Under these conditions of deposition the tight sod cover acts not only as a sediment trap but also as a protecting 'cap rock' to the older levee deposits. The intermittence of the stream and the looseness and fine texture of the deposit allow the sod to reestablish itself after each overflow. Those localities in which the grass is not able to reestablish itself would be susceptible to 'wash-outs' through the levees with resultant shifts in the course of the channel.

Sedimentation abstracts compiled by Soil conservation service. Civ.Engin. 11(5):322. May 1941. 290.8 C49

The suspended matter in the Nile. Engin.[London]171(443):168-169 Mar.7,1941. LC
Abstracted from a report under this title regarding investigations relating to the Aswan reservoir by Y.M.Simaika.

Vitols, A. Eine verallgemeinerte hydraulik (Psammo-hydraulik) als Werkzeug zur Lösung des problems der geschiebcbewegung und anderer probleme der gemenge-hydraulik. (A generalized hydraulics (Psammo-hydraulics) as an instrument for the solution of the problem of sediment transportation and other problems of the hydraulics of mixtures. Wasserkr. u. Wasserwirtsch.34(11/12):122-135, illus. June 1939. 290.8 W28
In German.

"One of the most difficult problems of hydrology is that of sediment

transportation. In spite of all the efforts that have been made for more than half a century (we can take the year 1886, when Du-Boys published his formula, as the mile-stone that marks the beginning of this work), we still have no solution of this problem.

"The author has set himself the problem of filling this gap in the field of potamology. The fundamental thought of the author is to fit the solution of this problem into the framework of our ideas and concepts of hydraulics in the hope that this new generalized hydraulics, to which he assigns the name 'Psammo-hydraulics,' (from the Greek word, 'Psammes', meaning sand), will have the same utility as our present-day hydraulics, the latter being only a special case of the former, as the author proves rigorously.

"The means of creating this new hydraulics are well known: the knowledge of mechanics, mathematics, and mathematical physics. Many of the principal phenomena of sediment transportation, among those, the formation of riffles, are easily explained in the light of the formula derived. Furthermore, the old Du Boys' formula, which did not rest upon a very firm physical foundation and which has misled investigation of this phenomenon in the past is clarified.

"It is worthy of mention that another branch of hydraulics can be derived from Psammo-hydraulics as a special case; namely, that which pertains to motion of solid bodies (rafts and ships in canals). The name, 'Stereo-hydraulics', may be recommended for this.

"Also the problem of suspension of sediment is treated by introducing a special suspension coefficient. The transition from suspension to deposition, or vice versa, is specified by the numerical values of several coefficients which can be determined by direct observation." Summary from [U.S.] Natl. Bur. Standards. Hyd. Lab. Bul. 9 Ser. A, pp. 124-125. Jan. 1941.

Whipple, William. Missouri river slope and sediment. Amer. Soc. Civ. Engin. Proc. 67(3): 381-403, illus. Mar. 1941. 290.9 Am3P

"Data are supplied as to the bed and suspended sediment characteristics of the river, in both improved and unimproved sections. An analysis is presented of the applicability of various bed-load formulas, involving both competence and capacity, to the prediction of the future slope of the river; and results are compared with observations to date (1940) on completed sections of the river. It is generally concluded that: (1) Formulas involving competence will not give the answer to this particular problem; (2) the mean slope of the Missouri River eventually will decrease through the operation of the contraction works; and (3) the bed of the river will scour out progressively for some time to come."

Snow

Church, P. E. The snow cover of Washington state. Amer. Met. Soc. Bul. 22(2): 64. Feb. 1941. 340.8 Am32

Author's abstract of a full report to appear in 1941 Transactions, American Geophysical Union.

Paget, F.H. First snow survey completed. Calif. Highways and Pub. Works 19(2):10-12, illus. Feb. 1941. Pub. Roads

Snow survey measurements undertaken by the California Dept. of Public Works, Division of Water Resources.

Parshall, R.L. Relation of snow cover to irrigation supply. Through the Leaves 29(2):32-35, illus. Mar. 1941. 66.8 T41

"Typical forecast diagrams are shown to illustrate the simple correlations of water content of the snow in inches and the corresponding runoff in acre feet. These diagrams are for the discharge of the Arkansas river at Salida, Colorado; the Colorado river at Glenwood Springs, Colorado; and the North Platte river at Saratoga, Wyoming. They are based on the April 1 snow surveys in each drainage basin, and the summer runoff for the period April to July, inclusive."

Snow up yonder means water for crops down here. Oreg. Farmer 64(9):219, illus. Apr. 24, 1941. 6 Or32

Snow survey studies and findings of SCS with reference to Oregon. Article of same title, with a few changes, referring to Idaho appears in Idaho Farmer 59(9):224. Apr. 24, 1941.

Stoeckeler, J.H. and Dortignac, E.J. Snowdrifts as a factor in growth and longevity of shelterbelts in the Great Plains. Ecology 22(2):117-124, illus. Apr. 1941. 410 Ec7

Methods of study; effect of density of shelterbelts on snow-drifting; increase of soil moisture due to snowdrifts; depletion of soil moisture by shelterbelts; penetration of frost in relation to depth of snow cover.

Soil Conservation

A brief anthology. The Land 1(1):60-66. Winter issue, 1941. 279.8 L22

Quoted passages from books, articles, letters and speeches relating to conservation of soil.

Cooke, M.L. and others. Manifesto. Friends of the land: a non-profit, non-partisan association for the conservation of soil, rain and man.

The Land 1(1):11-13. Winter issue, 1941.

Evidence of the need for Friends of the land; a statement of purpose; what we can do.

Diener, H.C. A conservationist looks at conservation farming. U.S. Soil Conserv. Serv., Soil Conserv. 6(10):259-261. Apr. 1941. 1.6 So3S

The writer contends that Nathaniel S. Shaler's question, asked in 1896, as to "whether human culture, which rests upon the soil, can devise and enforce ways of dealing with the earth which will preserve the source of life so that it may support the men of the ages to come," has been affirmatively answered, at least in part.

King, Barrington. Hard work, but no hard times. U.S. Soil Conserv. Serv., Soil Conserv. 6(10):[244]-248, illus. Apr. 1941. 1.6 So3S

About a protective system of farming utilized on a Georgia hill farm.

"Stated briefly, [the] farming program includes (1) utilizing all crop

residue on the land; (2) deep plowing with a sharp-pointed, modified bull-tongue plow that breaks the subsoil without turning the land, mixes part of the crop residue with 2 or 3 inches of the topsoil and leaves most of the crop residue on the surface; (3) contour tillage; and (4) simple rotations that include a large proportion of small grains, cow-peas, and O-too-tan beans, and a small proportion of cotton and corn."

Rawe, J.C. Our soil is ailing. A plea we do something about feeding the bugs underground. Commonweal. 33(21):515-517. Mar. 14, 1941. BAE

The writer contends that "the job of agriculture is not to break up the complex biological system of soil, soil microbe, plant and animal into fragmentary parts" - the biological system must be kept healthy and in gear.

He also advocates the wider dissemination of information to both city and rural people relative to the work of Bennett, Lord, Howard and Pfeiffer.

Rutherford, D.M. Mechanical means of saving the soil surface. Pacific Rural Press and Calif. Farmer 141(8):304, illus. Apr. 19, 1941. 6 P112

Suggests a program for utilizing crop residues and employing tillage implements such as the one-way disk, modified moldboard plow, and the lister bottom which, on the basis of SCS investigations, will influence the intake of water into the soil.

Slattery, Harry. Electric power aids soil conservation. U.S. Soil Conserv. Serv., Soil Conserv. 6(10):252-254, 258, illus. Apr. 1941. 1.6 So38

"The electric distribution lines spreading over rural America at an unprecedented rate provide new tools for the soil conservationist. He can use the availability of electricity to encourage diversification in one-crop areas. He can use it to bring about better pasture management. He can use it to foster improved irrigation pumping practices in the arid regions and to encourage supplemental irrigation, where desirable, in the humid regions.

"Indirectly, rural electrification can assist the soil conservation program by providing power for local industries."

Soil and moisture conservation. U.S. Bur. Reclam. Reclam. Era 31(4):103, 127, illus. Apr. 1941. 156.84 R24

Outlines program for soil and moisture conservation investigations and surveys for 12 reclamation projects as a part of the work on public lands undertaken by the Department of the Interior.

Spence, L.E. The grazing service expands its soil and moisture conservation program. [U.S. Dept. Int.] Grazing Bul. 4(2):17-21, illus. Apr. 1941. 156.43 G79

Stoney, G.C. No room in green pastures. Survey Graphic 30(1):14-20, illus. Jan. 1941. 280.8 C376

"In another of his important series of articles on the South in Transition, Mr. Stoney tells the story of the amazing growth of the beef and dairy industry in the Black Belt. As fat herds and pillared mansions adorn a rural landscape once noted for cotton fields and

croppers' shacks, a southern question still remains: What's to become of the displaced people?

"Somehow we must work into our plans for conserving the soil and the equity of its owners, some provision for conserving the hands, Black Hands or white, that have been making it produce. For these hands, these Black Hands and white, are the substance of America. Whether or not they will form a hard fist for her defense depends, finally, on how much they are included in these plans. It will depend on how much real democracy we have."

Trenary, O.J. The relation of engineering to soil conservation programs. Northwest Sci. 15(1):20-23. Feb. 1941. 470 N81

War's opportunity. Imp. Bur. Soil Sci. Soils and Fert. 4(1):1-2. 1941. 241 Im7P

An article advocating the execution of sound soil-conservation policies which should parallel development of a more sustained agriculture as a result of war time demands.

Wickard, C.R. Conservation, a lasting emergency. U.S. Bur. Agr. Econ., Land Policy Rev. 4(4):14-17. Apr. 1941. 1 Ec7La

"The Secretary of Agriculture points out here that in the great new tasks before us we should remember a great, continuing task, the obligation of conserving our soil and other resources."

Soil Conservation. Economic Aspects

Enlow, C.R. What does soil saving cost? Country Gent. 111(5):7, 60-61, illus. May 1941. 6 C833

"In response to a request from Country Gentleman's editors, SCS states clearly, by example, what a farmer must spend in adopting the new pattern of agriculture."

W, R.O. Economics of soil erosion in Victoria. Imp. Bur. Pastures and Forage Crops, Herb. Rev. 8(2):117. June 1940. 64.8 Im7H

"J.A. Aird, Chief Irrigation Officer in the State of Victoria, attempts to assess the economic effect of erosion in the State, as measured by the damage or destruction of public works by wind and water (destruction of bridges, landslides, siltation and sedimentation, etc.), and the loss of fertility and soil on wheat and grazing lands (Australasian, Melbourne, Mar. 2, 1940).

"It may be said that approximately, and most approximately, erosion causes a direct charge on the budget of £200,000 per year, and has caused a reduction in the production of the State of about £3,000,000 per annum, which as the effect of reducing the income of the State through taxation and other revenue by approximately £750,000, so that the cost to the State revenue is in the vicinity of £950,000, or in round figures £1,000,000 per annum."

Entire article quoted.

Soil Conservation. Study and Teaching

Schools to combat erosion. Farmers Weekly [Bloemfontein] 60:1353. Feb. 5, 1941. 24 F225

"An educational scheme has been introduced into Southern Rhodesian

schools with the view to giving the pupils some idea of how to combat the menace of soil erosion.

"Twenty teachers, the inspectorate and head-masters from all parts of the Colony, have taken a refresher course arranged by the Irrigation Department. The course gives the teachers knowledge of the necessary instruments and of how to make and use them for soil conservation methods.

"The scheme goes further than soil and water conservation and aims to give the children, through the teachers, an idea of the practical application of mathematics, trigonometry and geometry in the ordinary life of the farmer."

Entire article quoted.

Strunk, W.L. Conservation through education. Subject matter begins at home. Minn. Dept. Conserv. Conserv. Volunteer 2(7):1-3. Apr. 1941. 279.8 C76;
Suggestions for the teaching of conservation as sponsored by the Minnesota Department of Conservation.

Tappan, J.B. and Raymond, Anne. Water - the first line of defense. Prog. Ed. 18(4):208-209, illus. Apr. 1941. 275.8 P94

A teachers' panel on conservation and natural resources. N.C. Univ. Dept. Ed., High School Jour. 24(3):118-119. Mar. 1941.

Summary of objectives, discussion and conclusions of a group of Washington county, Utah teachers in "exploring the possibilities of the land as the basic resource of their country".

The educational staff of SCS served as consultants and interpreters of technical programs and materials.

West, Ruth. Education for wise use of our resources. Civ. Leader 8(27):1-4. Mar. 31, 1941.
"Bibliography," p. 4.

Williams, G.H. Educate the children. Key to future conservation. Ohio Farmer 187(7):7, 31, illus. Apr. 5, 1941. 6 Oh3
Tells something of the program and booklets planned by the National Wildlife Federation.

Soil Conservation Districts

Reports show progress of soil erosion districts. Colo. Ext. Rec. 10(2):[1], 4. Nov. 1940. 275.29 C71Tx

Summary of report of Big Sandy soil conservation district as typical of the activities reported at the annual supervisor's conference for members of Colorado soil conservation district boards.

Slone, J.C. Farmers working together, Tombigbee-Warrior district. U.S. Soil Conserv. Serv., Soil Conserv. 6(10):249-251, 264. Apr. 1941. 1.6 So3S

"This article is adapted from an address delivered by Mr. Slone before the Association of Southern Agricultural Workers, Atlanta, Ga., February 6, 1941."

Soil Erosion and Control

Bennett, H.H. Soil erosion control appraised. Agr. Leaders' Digest 22(3):12-13, illus. Mar. 1941. 275 Am3

Bond, R.M. Rodentless rodent erosion. U.S. Soil Conserv. Serv., Soil Conserv. 6(10):269, illus. Apr. 1941. 1.6 So3S

Describes "rodent gullies" on Anacapa Island, off the southern California coast, where there are actually no pocket gophers, ground squirrels or moles, but where due to the physical or chemical nature of the soil develop "many outstanding examples of what might be called, on the mainland, typical rodent-caused gullies."

Calkins, H.G. Man and gullies. N. Mex. Quart. Rev. 11(1):69-78. Feb. 1941.

Erosion check cloth. Amer. Forests 47(5):251. May 1941. 99.8 F762

"'Erosionet,' a strong economical open mesh fabric made of tightly twisted paper twine and designed for use in checking soil erosion, has been announced by the Bemis Brothers Bag Company. When placed over seeded surface, its one-quarter inch square mesh is said to form millions of tiny dams which catch and hold seed and sod firmly in place, and thus checks damaging 'washouts' from heavy rains without cutting off the sunlight. 'Erosionet' is also said to catch and hold moisture and to be rot-resisting."

Entire article quoted.

Noll, J.E. The first erosion experiment farm [at Bethany, Mo.] The Land 1(1):24-25. Winter issue, 1941. 279.8 L22

Rose, C.W. Flotation erosion by ice. Jour. Geomorph. 4(2):[142]-144, illus. Apr. 1941. 331.8 J82

Describes "an unusual type of erosion, here termed flotation erosion" which has occurred in low-lying areas or depressions of the Chanango River floodplain in Chanango County, New York. There is unquestionable evidence that from four to six inches of soil was removed, on masse, from some of these areas although the actual mechanics of removal are uncertain. Circumstances prevailing when this erosion took place in the spring of 1936, however, strongly indicate that ice was the agent causing mass removal of the soil."

Twenhofel, W.H. Agricultural significance of erosion losses. Amer. Jour. Sci. 239(5):357-364. May 1941. 470 Am34

"Abstract. Erosion is done by surface and subsurface waters. Surface erosion may be decreased and prevented under some conditions. Sub-surface erosion cannot be prevented. It is also increased by the methods used to prevent surface erosion. Losses of plant nutrients through work of subsurface waters are large and these losses must be deducted from total erosion losses to obtain an approximate estimate of preventable erosion losses."

Soil Erosion and Control. Foreign Countries

Alberti, M.M. La protección del suelo según el método bio-dinámico.
(The protection of the soil following the bio-dynamic method)
La Cosecha 3(31/32):7-15. Jan./Feb.1941. 9 C82
In Spanish.

Refers to the soil conservation law in Argentina, the need for erosion control and reviews the "new movement" not only to control erosion but the fertility of the soil advocated by Rudolf Steiner.

"Comet" Save the intake beds of our underground waters. Fast.Rev✓
51(3):191-192. Mar.15,1941. 23 Au75

Cautions against erosion in Queensland which is "creeping towards and over the artesian intake beds of that once naturally well-protected area, principally by the destruction of timber on the mountain and hill slopes."

de Freitas, H.D. Sobre a necessidade de um serviço de controle a erosão.
(On the necessity for a service for the control of erosion.) Ceres
[Rio de Janeiro]2(8):147-153, illus. Sept./Oct.1940. 9.2 C332
"Bibliografia," p.153.
In Portuguese.

Reviews erosion conditions in the old world and the United States, mentioning the Soil Conservation Service, and points to the need for a similar organization in Brazil.

De Wet, I.J. Conservation scheme that cost only £150. Farmer's successful effort to reduce soil erosion in the Sterkstroom district [South Africa]. Kikuyu grass strengthens dam walls. Farmers Weekly [Bloemfontein] 60:622-623, illus. Nov.20,1940. 24 F225

Kuprianov, I. Perennial herbaceous plants on the Black Sea coast of the Caucasus. Soviet Subtropics no.4, pp.42-44. 1940. 20 Sul2
"It was found possible to control erosion and to maintain the fertility of coastal orchards and tobacco plantations by sowing Lotus corniculatus." Abs.Imp.Bur.Soil Sci., Soils and Fert.4(1):26. 1941.

Ladejinsky, W.I. Agriculture in British Malaya... U.S. Off. Foreign Agr. Relat., Foreign Agr.5(3):103-125, illus. Mar.1941. 1.9 Ec7For
Soil is discussed on pages 105, 111, 112.

In connection with the planting of rubber trees, it is stated that "from the time of planting until the trees begin to bear, at about 5 or 6 years of age, there is little cultivation except, the eradication of weeds, any necessary drainage, work intended to reduce soil erosion, and prevention and treatment of diseases.

"Until recently the estates practiced clean weeding, as contrasted with the native practice of utilizing cover crops or of simply letting the gardens grow up in weeds as a means of conserving the soil. The result of clean weeding has been to expose the soil to direct denudation by heavy rainfall, causing disastrous soil erosion, as evidenced by exposed tree roots. Under these conditions surface soil, with its valuable humus, has been lost.

"Then the detrimental effects of this practice were finally realized,

the estates began to cultivate close-growing cover crops, usually leguminous plants that improve the soil and prevent erosion. Such cultivation is particularly important during the early years of a stand when the trees are unable to provide sufficient shade to protect the soil."

Lester-Smith, W.C. Soil conservation problems on small-holdings in Ceylon. Rubber Res. Scheme, Ceylon, Quart. Cir. 17(2):118-130. 1940. 78.9 C33Q

Manilov, N. Nature of erosion phenomena in the Don district of Stalingrad region. Pedology no. 8, pp. 98-104, illus. 1939. 57.8 P34
In Russian.

The use of soil monoliths in erosion studies is described. Wind erosion on the right bank of the Don river and methods of erosion control are discussed." Abs. Imp. Bur. Soil Sci., Soils and Fert. 4(1):24. 1941.

Michelangeli, Mario. Il problema forestale albanese. (Forest problems of Albania.) Riv. Forest Ital. 2(10):441-458, illus. Oct. 1940. 99.8 R522
In Italian.

"Albania has about 500,000 ha. of forest and about 400,000 ha. of unproductive land that is suitable for forestry. Maintenance of forest cover is extremely important for protection of watersheds, because of mountain topography and heavy precipitation and the small proportion of arable land. The forests have been heavily overcut and overgrazed, so that restriction of cutting and grazing, pasture improvement, and reforestation are urgently necessary." - W. N. Sparhawk. Abs. Biol. Abs. 15(5):992. May 1941.

Natural resources. Rhodesia Agr. Jour. 38(3):121-122. Mar. 1941. 24 R34

"It is safe to say that the greatest forward step in the agricultural history of Rhodesia is marked by the Natural Resources Bill, 1941, which it is proposed to introduce during the main session of the Legislative Assembly...

"In terms of the Bill the Natural Resources Board shall have as one of its functions general supervision of natural resources, the greatest of which is unquestionably the soil. On the recommendation of the Board the Minister of Agriculture and Lands can in the public interest construct and maintain on any land works for the protection of the source, course or feeders of a public stream, the disposal or control of storm water, the mitigation or prevention of soil erosion, and the conservation of water."

Olson, Lois. From the archives of old Venice. U.S. Soil Conserv. Serv., Soil Conserv. 6(10):265-268, illus. Apr. 1941. 1.6 So3S

Details of "the earliest known nation-wide program for the control of accelerated soil erosion" - the program recommended and presented in 1601 and 1602 by Guiseppe and Girolamo Paulini to be applied throughout the territory of Venice.

Rode, M.C.H. Reclamation of an eroded farm [in South Africa] The achievement of a Karoo farmer. Farming in So. Africa 16(180):82-83, 110, illus. Mar. 1941. 24 So842

S,A.E. Permanent water in an area of low rainfall. Karroo farmer's successful dam-building scheme in which silt serves as a filter-bed. Gravitation turned to advantage. Farmer's Weekly[Bloemfontein]60: 946-947,949,illus. Dec.25,1940. 24 F225

Soil erosion board appointed. Past.Rev.51(1):6. Jan.16,1941. 23 Au75

"Soil erosion in this State[Victoria]will be fully investigated and appropriate measures taken by a board of six appointed last month by State Cabinet.

"Chairman of the board is Mr.H.G.Strom,B.C.E.,A.M.I.E.,engineer of the State Rivers and Water Supply Commission. Departmental representatives will be: - Mr.C.T.Clark,district surveyor,of the Lands Department; Mr.R.F.McNab,engineer,of the Water Supply Department;Mr.W.J.Lakeland, engineer,of the Forests Department;and Mr.W.Baragwanath,director of geological survey,of the Mines Department.Mr.M.Mulquiny,of Charlton, represents pastoral interests.

Entire article quoted.

v.D.,G. Bodemonderhoud in theezaadtuinen.(Soil conservation in tea seed gardens.) Bergcultures 14(36)1147-1148,illus. Sept.7, 1940. 22.5 B45

"The first essential in tea seed gardens is that the soil should be free from weeds.On sloping ground,however,clean weeding results in erosion.At the experiment station,Pasir Sarongge,in Java,the difficulty was overcome by running narrow strips of turf in squares $2\frac{1}{2}$ x 3 metres and 3 x 4 metres round each young and old tree respectively and clean weeding the space enclosed within the strips.The turf was merely laid on the surface where it soon rooted.Such soil as was washed down the slope was retained by the turf strips and a succession of terraces was built up automatically,quickly at first,and then more slowly as the ground gradually became more level.The final levelling can be greatly assisted by fallen leaves and by burying weeds at the upper ends of the squares and spreading the excavated soil on to the lower side of the square above.This should be done every three months till the ground within each square is level.On the ground in question the original slope was one in seven.The grass of the turf ridges grows badly under shade but the sod itself remains in place and holds the slope intact.Although actual recorded data are not available it seems that the seed yield of the gardens was greatly increased by this terracing. Imp.Bur.Hort.and Plantation Crops.Hort.Abs.11(1):49-50. Mar.1941.

Soil Mulch

Eksteen,L.L.and van der Spuy,M.J. Effect of the soil mulch. Farming in So.Africa 16(179):51-52,56,illus. Feb.1941. 24 So842

"References,"p.56.

Subjects covered are: real and apparent capillary moisture;procedure of experiment;reduction of runoff;prevention of wind erosion.

Conclusions:"(1)From the experiments described it cannot be deduced that a soil mulch has any noticeable effect on the evaporation of moisture from soil in which the underground water level is very deep; (2)The crop yield can be greatly increased by controlling weeds

effectively during the early stages;(3)Cultivation of the soil reduces run-off;(4)Soils cultivated to a rough,broken surface do not easily become windblown."

Renick,Arthur. New way to save rain. Capper's Farmer 52(4):16,44.
Apr.1941. 6 M693

The writer tells of various farmers' experiences with and types of sub-surface tillers which tend to keep all stubble of the previous crop on top of the ground to impede flow of water during torrential showers,to prevent movement of drying air at the surface,and shade the soil to keep it cool.

Soil Studies

Alderfer,R.B.and Merkle,F.G. The measurement of structural stability and permeability and the influence of soil treatments upon these properties. Soil Sci.51(3):201-212,illus. Mar.1941. 56.8 So3
"References,"pp.211-212.

"A method is described which is sufficiently refined to reveal the small alterations in aggregate size and stability that may be produced within a single soil type by different soil treatments through variations in cultural practice,fertilization,erosion,etc.A numerical measure of the structural stability of the aggregates and the probable permeability of soils is presented.

"When the method is used to study differences in structure and permeability produced by cropping systems,fertilizing,and liming,it was shown that on a single soil:(a)A rotation of corn,oats,wheat and clover over a period of 58 years caused a breakdown of aggregates as compared with sod land adjacent;(b)A vegetable cropping system including no sod crop,and with cover crops only for soil improvement,produced after 21 years a poorer structural condition than the rotation described in(a);(c)Farm manure whenever used produced definite physical improvement;(d)Liming did not significantly alter the structural condition;(e)Other things being equal,structural stability is closely correlated with the organic content;(f)The volume weight exhibits a significant inverse relationship with structural stability,probable permeability, and organic content."

Hobbs,J.A. Field method for the estimation of soil textures. Amer. Soc.Farm Mgrs.and Rural Appraisers Jour.5(1):24-31. Apr.1941. 281.8 Am32
"Paper presented at the Annual Convention of the American Society of Farm Managers and Rural Appraisers,in Chicago,December 2 and 3,1940."

Nikiforoff,C.C. Soil dynamics. Sci.Monthly 52(5):422-429. May 1941. 470 Sci23

Tobiska,J.W. Soil treatment suggestions are result of study in sub-irrigated San Luis Valley. Colo.Expt.Sta.Farm Bul.2(4):4-6.
1940. 100 C71S

"Conditions in the area named approach those of solution culture in an inert supporting medium,the soils being coarsely sandy and adapted to the practice of supplying irrigation water from below the surface. High yields have been obtained,but salinity and alkalinity have appeared

at some points. Soil solution from the bad spots should be analyzed before treatment is attempted. Fertilizers free from chlorides and from sodium salts should be used where chlorine and sodium compounds are already present in high concentrations. Alkalinity is to be dealt with by means of organic fertilizers, sulfur, or gypsum. Ammoniated phosphates increased the yield and quality of potatoes where nitrogen and phosphate deficiencies had been found. Ammonium sulfate is preferred to nitrates. Calcium and magnesium deficiencies should be met by applying the sulfates of these elements rather than limestone or dolomite, unless the alkalinity is less than that indicated by pH 7.5. Conditions in the utilization of these sandy soils by irrigation from below approach those of water culture sufficiently closely that too high a concentration of the soil solution is to be avoided when possible. In any event, the solution should contain the mineral nutrients in proper ratio or balance. Abs. U.S. Off. Expt. Stas., Expt. Sta. Rec. 84(3):300-301. Mar. 1941.

Soil Surveys

Allison, R.V. and Henderson, J.R. Florida's need for a soil survey explained. Fla. Grower 49(3):5, 9, 14, illus. Mar. 1941. 80 F6622

Better use of land to produce greater farming profits seen in study of soil characteristics.

Jennings, D.S. and Wilson, Lemoyne. Soil surveying fundamental to efficient land-use planning. Utah Agr. Expt. Sta., Farm and Home Sci. 1(4):1, 8, 10. Dec. 1940. 100 UtlF

Recent establishment of planning and action program has intensified the demand for a basic soil survey throughout the state of Utah.

A soil survey bill for Florida. The way to wise and more profitable land usage. Fla. Grower 49(4):8, 14. Apr. 1941. 80 F6622

Terracing

McAlister, J.T. Equipment for terrace construction. Agr. Engin. 22(4):147-148, illus. Apr. 1941. 58.8 Ag83

Trees

Gemmer, E.W. Loblolly pine establishment as affected by grazing, overstory, and seedbed preparation. Jour. Forestry 39(5):473-477, illus. May 1941. 99.8 F768

Kohnke, Helmut. The black alder as a pioneer tree on sand dunes and eroded land. Jour. Forestry 39(3):333-334. Mar. 1941. 99.8 F768
"Literature cited," p. 334.

Seaman, E.A. Plan to plant willows... Ohio Dept. Agr., Div. Conserv. Bul., Mar. 1941, pp. 18-19, illus.

Use of willows, willow mats, willow planting in Ohio, winter storage of willow cuttings, planting willows vs. fish management.

Diagram shows a step-by-step method of building willow mat for streambank protection.

Stoutemyer, V.T., Giles, W.L., and Detwiler, S.E. Vegetative propagation of conifers. Jour.Forestry 39(4):419-420. Apr.1941. 99.3 F768
Review of an article by Carl G. Deuber, appearing in Transactions of the Connecticut Academy of Arts & Sciences, 34:1-83.

The reviewers state that "this publication is timely in view of the rapidly developing interest in clonal selections of forest trees and erosion-control plants."

Vegetation

Aikman, J.M. The effect of aspect of slope on climatic factors. Iowa State Col. Jour. Sci. 15(2):161-167, illus. Jan.1941. 470 Io9

"Literature cited," p.167.

"The present study was undertaken to determine the magnitude of differences in climatic factors, independent of any measurable effect of modifications in plant cover, on four aspects of slope within a radius of one-fourth mile at the Hillculture Field Station near Floris in southern Iowa. The initiation of adaptation studies of a number of species and varieties of plants introduced into the area for the first time made it necessary to measure and evaluate, in this particular location, the degree of modification of climate factors resulting from topographic differences alone. The purpose of this paper is to present data showing the effect of aspect of slope on the individual climatic factors and on the integrations of climatic factors which seem to have the greatest effect on the establishment and growth of plants."

Frolik, A.L. Vegetation on the peat lands of Dane County, Wisconsin. Ecol. Monog. 11(1):[117]-140, illus. Jan.1941. 410 Ec72

"Literature cited," pp.139-140.

"The purpose of this paper is to present the results of studies during 1934 and 1935 on the ecology of the vegetation on the peat lands in the glaciated part of Dane County, Wisconsin, with special reference to such introduced biotically-controlled factors as artificial drainage, cutting and grubbing of trees and shrubs, mowing, grazing, burning, and soil disturbances."

Hack, J.T. Dunes of the western Navajo Country. Geog. Rev. 31(2):240-263, illus. Apr.1941. 500 Am35G

Classification, patterns, distribution, vegetation and its relation to dune forms in the Tallahogan area, age, modification by running water, development of present cover.

Ives, R.L. Vegetative indicators of solifluction. Jour. Geomorph. 4(2):[128]-132, illus. Apr.1941. 331.3 J82

"In the Southern Rocky Mountains, the presence of erratically spaced patches of aspen in the normal evergreen forests of the montane forest zone is a rather consistent indicator of soil motion. Sensible use of vegetative indicators greatly facilitates locating of solifluction phenomena in the field. Studies of the relation between plant successions and solifluction phenomena in various environments should result in the determination of other useful vegetable criteria."

Lee, W.D. Native plant succession on Piedmont soils. Changing plant life causes changes in animal life. N.C. Wildlife Conserv. 5(3):3-5, 14-15, illus. Mar. 1941. 279.8 N812

Stoddart, L.A. The Palouse grassland association in northern Utah. Ecology 22(2):158-163, illus. Apr. 1941. 410 Ec7

Water

Agoglia, F.F.A. El primer congreso Argentino del agua. (The first Argentinean congress on water) [Rosario, Argentina] Bolsa de Com. Bol. Ofic. 29(700):[3]-8. Mar. 15, 1941. 287 R71
In Spanish.

Lowry, R.L. and Johnson, A.F. Consumptive use of water for agriculture. Amer. Soc. Civ. Engin. Proc. 67(4):595-616, illus. Apr. 1941. 290.9 Am3P
"Transpiration and evaporation, together accounting for practically all consumptive use of water, have been shown by experimental investigations to be influenced by climatic factors, of which temperature gives one of the better correlations. Consumptive use in a number of adequately watered irrigated valleys and humid watersheds, representing a wide range in climate, latitude, elevation, and type of crops, is shown in this paper to bear a straight-line relation, within narrow limits, to accumulated daily maximum temperatures above 32° F during the growing season. Factors responsible for deviations from average consumptive use are discussed. The relation of consumptive use to growing-season temperatures offers to the engineer a ready means of estimating probable consumptive use on projects under investigation as an initial step in determining the irrigation requirement at the farm or at the point of diversion. Short descriptions of each area studied, with summaries of annual data, are given in the Appendix."

Monson, O.W. Water right procedure. Mont. Farmer 28[i.e. 11]:8, 11. Feb. 1, 1941. 6 M764

Mentions "extensive study of Montana's water resources" now under way as a result of a law passed by the 1939 state legislature.

More water conservation projects to be started. Nine projects have been approved, at a total cost of \$14,623,000, and studies are underway for 50 more. Engin. News-Rec. 126(15):519. Apr. 10, 1941. 290.8 En34

Concerns 5 of the Great Plains water conservation projects carried on by the U.S. Bureau of Reclamation with the Department of Agriculture and WPA and authorized by the Wheeler-Casc Acts of 1939 and 1940.

The New River decision. Supreme Court of the United States. No. 12. - October term, 1940. The United States of America, Petitioner, vs. Appalachian Electric Power Company. On Writ of certiorari to the United States Circuit court of appeals for the fourth circuit. [December 16, 1940] Amer. Waterworks Assoc. Jour. 33(2):315-342. Feb. 1941. 292.9 Am32J

Ranney, Leo. Water supply and national defense. Ohio Engin. Expt. Sta. News 13(2):2-6, illus. Apr. 1941. 290.9 Oh3En

Suggests the construction of clay or concrete underground dams built

across Ohio valleys to check underflow and conserve the water for useful purposes.

It is pointed out that a recent survey of Ohio "reveals that the average fall of the water table has been nineteen feet in the past twenty years - and this does not include such areas as the Mill Creek Valley, where the recession has been more than ninety feet since 1880, when the wells there were artesian.

"This condition in Ohio (and it is by no means limited to this State) is due to many factors - such as the destruction of forests, the digging of ditches and the laying of tile, a deficiency of rainfall, a continually rising consumption for domestic purposes, the introduction of air-conditioning and partly by the growing abstraction of ground water for industrial use.

"The runoff to the sea is forty times as great as total consumption by men, animals, and industry. So it will be apparent that if only two and one-half per cent of this wasted runoff could be charged into the ground, our available water supply would be doubled."

Tolman, C.F. and Stipp, A.C. Analysis of legal concepts of subflow and percolating waters. Amer. Soc. Civ. Engin. Proc. 67(3):433-437. Mar. 1941. 290.9 Am3P

Discussion of paper which appeared in December 1939 Proceedings.

Water right status. Attorney General tells how laws interpreted. Mont. Farmer 28(13):8-9. Mar. 1, 1941. 6 M764

Refers to the question "as to who may retain water by means of small storage dams for livestock or irrigation, and what determines the rights of the parties where there are conflicting rights on small intermittent streams."

Wilm, H.G. and Collet, M.H. A portable electric water-depth gage. Civ. Engin. 11(5):305, illus. May 1941. 290.8 C49

Description of a gage developed by the U.S. Forest Service and successfully used on several experimental watersheds in the West.

Youngquist, C.V. Measuring Ohio's rivers. Factors influencing water losses. Ohio Engin. Expt. Sta. News 13(2):23-24, illus. Apr. 1941. 290.9 Oh3En

Wildlife Conservation

Davison, V.E. and Van Dersal, W.R. Broomsedge as a food for wildlife. Jour. Wildlife Managt. 5(2):180-181, illus. Apr. 1941. 410 J827

Evans, T.R. Soil conservation farmers. Guardians of our wildlife. Minn. Dept. Conserv. Conserv. Volunteer 2(7):59-61. Apr. 1941. 279.8 C765

"Farmers are wildlife's most valuable friends; the author cites Houston county [Minn.] for examples."

Lehmann, V.W. and Ward, Herbert. Some plants valuable to quail in southwestern Texas. Jour. Wildlife Managt. 5(2):131-135, illus. Apr. 1941. 410 J827

Vaughn, E.A. Indian spring wildlife demonstration area, Washington County---Federal Project 3-d. Md.Conserv.18(1):9-12, illus. Winter Issue, 1941. 279.8 M36

Describes a Maryland project to educate and create public interest through a demonstration wildlife management area.

"The Washington County Soil Conservation District is to cooperate with the caretaker in carrying on a program which will be beneficial to wildlife including contour strip-cropping, crop rotation, planting of wildlife hedges, releasing of game food-producing trees and shrubs along field borders and other soil erosion control measures which will provide a better habitat for wildlife."

Wind Erosion Control

Davison, B. and Rosenhead, L. Wind tunnel correction for a circular open jet tunnel with a reflexion plate. Roy.Soc.London, Proc.Ser.A.177(970): 366-382, illus. Feb.24, 1941. 501 L84A

"References," p.382.

DerUyl, Daniel. The effect of natural pruning on the protective value of a windbreak. Jour.Forestry 39(3):335-336, illus. Mar.1941. 99.8 F768

Moberly, L.T. Studies of methods of establishing stands of perennial grass for wind erosion control. U.S.Soil Conserv.Serv.Rep.6 South. Great Plains Messenger, Apr.15, 1941, pp.[26]-[30]. 1.9606 So32

Roberts, P.H. Who plants a tree, plants protection. U.S.Bur.Agr.Econ., Land Policy Rev.4(4):31-35. Apr.1941. 1 Ec71a

"The Great Plains shelterbelt project is 6 years old. Some skepticism remains about its values, but in this report of its accomplishments, problems, and nature, it is contended that shelterbelts pay dividends in protecting crops and soils, furnishing fuel, helping wildlife, and providing esthetic benefits."

Simmons, N. The wind tunnel with open working-section. London, Edinb. and Dublin Phil.Mag. and Jour.Sci.31(205):89-102, illus. Feb.1941. 472 P54

"References," p.102.

Williford, C.C. Black dust with hail, snow and rain. Amer.Met.Soc.Bul. 22(3):122-124. Mar.1941. 340.8 Am32

Correspondence regarding black dust in Arkansas and Missouri which may have been soil blown from Texas.

Wind erosion of soils. Work of the Experimental Branch of the Department of Agriculture [South Australia] So.Austral.Dept.Agr.Jour.44(7):353-357, illus. Feb.1941. 23 So84

"The work at Bute has demonstrated that the drifts and sand ridges common in the district can be adequately controlled by seeding with rye and lucerne accompanied by a dressing of super, and the planting of Pyp grass on the deep, loose areas of sand inaccessible for drilling.

"It would be advantageous to break down the edges of mounds and craters immediately before seeding.

"The above plants can be recommended for use in controlling drifts in

districts with rainfall varying from 12 in. to 20 in. annually."

BOOK AND PAMPHLET NOTES AND ABSTRACTS

Bennett, Rudolf. Principles of wildlife conservation. A syllabus of course zoology 6, University of Missouri... 143pp., processed.
[n.p.]cl941. 411 B43
"List of references," pp.140-143.

Blaisdell, D.C. Government and agriculture. The growth of federal farm aid. 217pp. New York, Farrar and Rinehart, inc. [cl940] (American government in action series) 281.12 B57
"Selected bibliography," pp.203-207.

The author was, for four years, administrative assistant to M.L. Wilson, undersecretary of agriculture. He, therefore, writes from first-hand knowledge of agriculture in maladjustment, the response of government to agriculture, agricultural adjustment, soil conservation, furtherance of farm security, democracy in the farm program and the Department of agriculture - a service agency for farmers and the country.

Branom, M.E. The agricultural economy of the American bottoms in Madison and St. Clair counties, Illinois. 54pp. St. Louis, Mo., Mendel E. Branom, 1941. 281.023 B73

"This article is an abridgment of a dissertation (213 manuscript pages) which includes 17 maps, 32 graphs, 7 tables and 44 pictures. Part I is essentially the same as Chapter I in the complete dissertation."

"Selected bibliography," p.54.

"The American Bottoms is a part of one of the outstanding conurbations of the United States and is an impressive example of the uses which man makes of flood plains." Contains geological, drainage and transportation, soil, land classification and types-of-farming maps of the area.

California. Dept. of education. California's natural wealth. A conservation guide for secondary schools. Prepared under the direction of the California conservation council. 124pp., illus. Sacramento, Dec. 1940. (California state department of education Bulletin v. IX no. 4) 279.010 C12

"Selected references," pp.116-118.

Appendix, Sources of information on conservation, p.119.

California state planning board. Surveys and maps in California. 124pp., illus. Sacramento, 1940. 280.7 C12S

Characteristics, methods and present status of aerial photographs, topographic surveys and maps; vegetation, geological, geographical and state and county base surveys and maps of California.

Colorado. Dept. of education. Colorado's wealth; a bulletin on conservation of natural resources. 136pp., illus. [n.p., 1940] 279.011 C71
Written and edited by Julia B. Tappen, Soil conservation service, U.S.D.A.
"Literature cited," p.136.

Denver university. Dept. of government management. School of commerce, accounts and finance. County reorganization. Denver Univ. Dept. Govt. Mangt. School Commerce, Accounts and Finance. You Make America Ser. 4. 28pp. Denver, Apr. 1940. 230.9 D43 no. 4

Friends of the land. Transcript of proceedings at the organization meeting, March 22-23, 1940. 43, 9pp., mimeogr. [Washington, D.C., 1940] 279.9 F9

Gustaffson, I. The influence of temperature on the permeability of soils to water. Uppsala. Lantbrhogs. Lantbr. Ann. (Annals of the Agr. col. Sweden) 8:425-456. 1940. 104 Up6
In Swedish.

"Determination of the permeability of a soil, whether by field or laboratory studies, should be reduced to a fixed temperature in order to become commensurable." U.S. Off. Expt. Stas. Expt. Sta. Rec. 84(5):588. May 1941.

Gustafson, A. F. Soils and soil management. 424pp., illus. New York, McGraw-Hill book co. inc., 1941. 56.7 G97S

While this book deals briefly with fundamental principles, particular emphasis is placed upon their application in the field in order to show the student what to do to produce crops economically and at the same time to preserve the soil. Considerable space is devoted to the causes of soil erosion and its control.

Hickok, W. O. and Moyer, F. T. Geology and mineral resources of Fayette county, Pennsylvania. Pa. Topog. and Geol. Survey Bul. C 26. 530pp., illus. Harrisburg, 1940. 406 P383B no. C-26
Bibliography of Fayette county geology, pp. 2-6.

Illinois state planning commission. Report on the lower Illinois river basin and contiguous area draining directly into the Mississippi river. 87pp., tables Chicago, Sept. 1940. 280.7 I1611
Revised edition of the report prepared for the National water resources survey of the National resources committee in 1936-1937. Corrected to Jan. 1, 1940.

Improvement of the dust bowl. First television debate. Bucknell university affirmative vs. Columbia university negative. In Intercollegiate debates, edited by Egbert Ray Nichols, volume XXI, pp. 283-309. New York, Noble & Noble, inc. [c1940] Libr. Cong.
Bibliography, pp. 306-309.

Kansas academy of science. Transactions volume 43, seventy-second annual meeting, March 28-30, 1940, University of Wichita, Kansas. 489pp., illus. Topeka, 1940. 500 K13T v. 43

Partial contents: Soil moisture and winter wheat in Kansas, by H. E. Myers, pp. 69-73; A study of the variations in the growth of blue grama grass from seed produced in various sections of the Great Plains region, by Andrew Riegel, pp. 155-167.

Klemme, Marvin. An American grazier goes abroad. 352pp., illus.
Salt Lake City, The Deseret news press [c1940] 30 K67

The writer, formerly on the staffs of the Forest Service and the Taylor Grazing Administration, traveled in the Hawaiian Islands, New Zealand, Australia, Philippine Islands, Japan, China, Manchuria, Mongolia, Siberia, Russia, Europe, Finland and the Scandinavian countries, Germany, Switzerland, England and France. He writes of livestock breeding, range management, forestry and general agriculture, mentioning erosion also.

He states in his conclusion that "in no country, except China, does one see erosion in such magnitude as he does in this country."

Longwell, C.R., Knopf, Adolph and Flint, R.F. A textbook of geology. Part I - physical geology. Ed. 2, rev., 543 pp., illus. New York, John Wiley & sons, inc., 1939. 400 L86 Ed. 2, v. 1

"Two new chapters have been added: Chapter 3, which gives particular attention to highly important movements such as creep and landsliding, all of which are included in the suggested term mass-wasting; and Chapter 5, in which the sculpturing of the lands by running water is treated as a unit, following a discussion of the principles of stream action in the preceding chapter."

A few chapter headings are: Rock weathering and its part in erosion; Mass wasting at the earth's surface; Running water; Subsurface water; Erosion and deposition by wind; Marine erosion and deposition.

Moore, R.C. Ground-water resources of Kansas. Kans. State Geol. Survey Bul. 27. 112pp., illus. [n.p.] 1940. (Kans. Univ. Pub. v. 1940, no. 2, June 25, 1940) 406 K13B no. 27

Includes chapters by S.W. Lohman, Ground water in the McPherson district Kansas; Occurrence of ground water in Ford county, Kansas by H.A. Waite; Ground water in the Meade artesian basin, southwestern Kansas, by J.C. Frye; Ground water in the Scott district Scott and Finney counties, Kansas, by H.A. Waite; Ground water in the Stanton district southwestern Kansas, by T.G. McLaughlin and Bruce Letta; Gaging the ground water reservoirs of Kansas, by S.W. Lohman.

Morison, F.L. and Hurt, B.R. The Licking county experimental agricultural conservation program in 1940. Ohio Univ. Dept. Rural Econ. Mimeogr. Bul. 136. 30pp., mimeogr. Columbus, Mar. 1941. 281.9 Oh32

Nebraska legislative council. Research department. Regulation of the use of groundwater in Nebraska. Nebr. Leg. Council. Rpt. 14. 15pp., mimeogr. Lincoln, Nov. 1940. 284.9 N272 no. 14

A consideration of an effective system of state regulation or control for pump irrigation, or irrigation by water pumped from wells for which "there is a great deal of enthusiasm".

Nevada state engineer. Biennial report...for the period July 1, 1936, to June 30, 1938. 197pp. Carson City, 1938. 55.9 N41 1936/37-1937/38

Partial contents: Chap. VI. Brief summary of laws enacted by the Nevada legislature relating to water and the Office of the state engineer, pp. 46-60; Chap. VII. Water distribution - Humboldt river. Pertinent facts and history, pp. 61-82; Chap. VIII. Distribution of water from Humboldt river,

and litigation connected therewith, pp. 83-101; Chap. XI. Government activities relative to conservation of water. The Truckee storage project, pp. 113-125.

New Hampshire water resources board and water control commission. Second biennial report 1937 and 1938. 75pp., illus. Concord [1939?] 292.9 N452 2d 1937/38

Information on conservation, flood control and recreational reservoirs; flood control activities, flood of 1938, federal flood control plans. The appendix lists river drainage areas, stream flow records, rainfall record, major existing storage reservoirs for river regulation, storage reservoirs for water supply.

Pennsylvania nut growers' association. Report of the proceedings of the eighth annual meeting and 1939 field day. 31pp., mimeogr. [Harrisburg, 1940?] 94.69 P38 8th, 1940
Hillculture research in the Soil conservation service, by S.B. Detwiler, pp. 13-16.

Raper, A.F. and Reid, I. de A. Sharecroppers all. 281pp., illus. Chapel Hill, University of North Carolina press, 1941. 280.002 R18

A picture of the South as it is today, paying the bills of yesterday's exploitation of land and man. The writer is of the opinion that "the South is not defeated yet and that by integrating national and community efforts she may be able to conserve and use her natural resources."

Ricco, Guido di. Le irrigazioni nei riguardi tecnico-costruttivi. (Irrigation in regard to technical construction) 326pp., illus. Firenze, S.A.G. Barbera editore, 1940. (Biblioteca della bonifica integrale volume ottavo, parte prima) 282 B48 v.8, pt.1.
Bibliografia, pp. 307-312.
English summary, pp. 312-312.

Rowlands, W.A. A series of two discussions on "Rural planning and land use, the land and the people," "Rural planning and coordination of activities." v.p., mimeogr. [Columbus?] July 1940. 282.12 R79

Schmidt, C.T. American farmers in the world crisis. 345pp. New York, Oxford university press, 1941. 281.12 Sch5

Answers simply and briefly such questions as the basic causes of farm distress and what the government is doing to relieve it, evaluating various government efforts in the farmers' behalf in terms of their contribution to farm income, their cost, their effects on various elements of the farm population and on the nation as a whole.

The Soil Conservation Service program is included.

Spiegel, H.W. Land tenure policies at home and abroad. 171pp., tables. Chapel Hill, University of North Carolina press, 1941. 282 Sp4

"Selected bibliography," pp. 156-164.

"Conservation policies and tenure policies are not only compatible but complementary to each other," indicates the author. He discusses land tenure policies from a general point of view in a topical arrangement including such subjects as objectives of land tenure policy public control over land, the legal background, land inheritance, tenure of forest land, collective action, farm credit and farm tenancy policy.

Texas agricultural workers' association. Papers presented at annual meeting, Dallas, Texas, January 12-13, 1940, Louis P. Merrill, president, Maurine Hearn, secretary. v.p., processed. [n.p., 1940?] 4 T314 1940

Partial contents: Permanent systems of farming, by H.H. Bennett; Conservation's part in stabilizing farm income, by R.H. Evans; Soil conservation districts, by V.C. Marshall; Progress in soil conservation district organization, by W.W. Cardwell; Land use capability classes as a basis of conservation farm planning, by C.L. Orrban; Cooperative buying as an aid in conservation, by V.R. Smitham.

Texas state soil conservation board. Progress report [1939/40] 18pp., illus. Temple, Aug. 15, 1940. 56.9 T31 1939/40

Organization of soil conservation districts in Texas pursuant to House bill no. 60 as enacted by the 46th legislature, 1939.

Includes "milestones in Texas conservation history" such as date of first known Texas terrace, etc.

Twenhofel, W.H. and Tyler, S.A. Methods of study of sediments. 183pp., illus. New York, McGraw-Hill book co. inc., 1941. 400 T91M

A brief, nonmathematical, yet complete presentation of methods of study of sediments."

Weaver real estate appraisal training service. Farm land division. Real estate appraising. 408pp., illus. Kansas City [c1940] 281.12 W37

A series of 34 booklets giving practical instruction on farm appraising together with fundamentals of management and engineering.

White, W.N., Broadhurst, W.L., and Long, J.W. Ground water in the high plains in Texas. Prepared in cooperation with the United States Department of the interior, Geological survey. 56pp., illus. [n.p.] Dec. 1940. 292 W58G

Bibliography, p. 32

Wyoming state engineer. Twenty-fifth biennial report to the governor 1939-40, L.C. Bishop, state engineer. 106, 45pp., illus. Cheyenne [1941?] 290.9 W99 25th 1938/40

The report covers stream measurements, storage reservoirs, waste of water, recommended legislation regarding stock reservoirs, plans for dams.

An article of interest is: Underground water studies, by M.B. Bennett, jr., pp. 32-38.

Wyoming state planning and water conservation board. Report on Parkman irrigation district, Sheridan county, Wyoming. 19pp., maps., mimeogr. [n.p.] Aug. 30, 1940. 280.7 W992R

This report covers the possibilities of the irrigation of fairly large bodies of land from Tongue river.

First are given the reasons and scope of the report, then the projects considered, namely cost estimates of the Parkman irrigation district and Sheridan canal; reservoirs; water supply studies such as demand, source of supply, precipitation, stream flow and runoff and available water supply.

STATE EXPERIMENT STATION AND EXTENSION PUBLICATIONS

Arizona

Arizona agricultural experiment station. Fiftieth annual report for the year ending June 30, 1939. 102pp., illus. Tucson [1940] 100 Ar4 50th, 1938-39
Gypsum in irrigation water, p.31; Soil conservation studies. Erodibility studies, p.31; Infiltration studies, pp.31-32; Effect of plant cover in controlling erosion and runoff, p.32; Bound water in normal and puddled soils, pp.37-38; Distribution of burrowweed on Arizona ranges in relation to soil conditions, p.39; Lysimeter studies, p.40; Ground water studies, pp.42-44; The drouth of 1939, pp.44-45; The governor's committee on ground-water law, pp.45-46.

Smith, G.E.P. The groundwater supply of the Eloy district in Pinal county, Arizona. Ariz. Agr. Expt. Sta. Tech. Bul. 87. 42pp., illus. Tucson, June 1, 1940. 100 Ar4 no. 87

Wilson, J.B. and Yoder, R.E. Terracing and related soil conservation practices for Alabama. Ala. Polytech. Inst. Ext. Cir. 165. 24pp., illus. Auburn, Jan. 1940. 275.29 AliC no. 164

Originally issued in Nov. 1938. Reprinted, Jan. 1940.

Tables show sheet erosion losses from cotton land with rows planted on the contour and with the slope; soil losses from continuous cotton and from a cotton and vetch rotation and diagrams indicate the principles of terrace design; and a homemade terrace drag.

Colorado

Stewart, T.G. Saving Colorado's soil. A soil-conservation handbook for young people. Colo. Agr. Col. Ext. Bul. 362-A. 40pp., illus. Fort Collins, Sept. 1940. 275.29 C71E no. 362-A
A handbook for young people, profusely illustrated.

Illinois

Lehmann, E.W. and Hay, R.C. Save the soil with contour farming and terracing. Ill. Agr. Col. Ext. Serv. Cir. 513. 44pp., illus. Urbana, Apr. 1941. 100 Il6S no. 513

Benefits, systems and planning contour farming and terracing; grass waterways and terrace outlets; construction, maintenance and cost.

Iowa

Iowa state college of agriculture and mechanic arts. Extension service. Soil management for Iowa cropland and pasture. 42pp., illus. Ames, Jan. 1941. 275.2 Io92Sm

The value of erosion control practices is emphasized and tables give information obtained at the SCS experiment station at Clarinda, Iowa, such as effect of length of slope and direction of row on total soil and water losses; effect of organic matter treatments on movement of

water through soil in lysimeters over five-year period; effect of different cropping practices on average annual soil and water losses; soil and water losses from crops and rotations.

Maryland

Dodson, L. S. and Woodworth, R. N. Rural community organization in Washington and Frederick counties, Maryland. Md. Agr. Expt. Sta. Bul. 437. 164pp., illus. College Park, Oct. 1940. 100 M36S no. 437

Massachusetts

Beaumont, A. B. and Kucinski, Karol. Conservation of Massachusetts soils. Mass. Agr. Col. Ext. Leaflet 193. 16pp., illus. Amherst, Mar. 1941. 275.29 M381L no. 193

Includes discussion of water conservation, the control of wind erosion; and methods of checking wind erosion on Cape Cod.

Michigan

Wolfanger, L. A. Landform types. A method of quantitative and graphic analysis and classification. Mich. Agr. Expt. Sta. Tech. Bul. 175. 24pp., illus. East Lansing, Feb. 1941. 100 M58S no. 175

Minnesota

Swanson, Gustav. Encouraging wildlife on Minnesota farms. Minn. Agr. Ext. 4-H Bul. 23. [12pp.] illus. [University Farm] June 1940. 275.29 M62Mm23
Protection of woodlands, protection of gullies, brush piles in wooded pasture, planting pond areas, stream bank protection, brushy fence rows and odd corners, the flushing bar, food patches for winter.

Montana

Allen, P. T. Montana soil and moisture conservation practices. Mont. Agr. Expt. Sta. Mimeogr. Cir. 27. 11pp., illus., mimeogr. Bozeman, Nov. 1940. 100 M76M no. 27

An analysis of the effects of soil and moisture conservation practices on organization and management of farms in the Power-Dutton and Froid soil conservation project areas.

Renne, R. R. Who owns Montana's land? Mont. Agr. Expt. Sta. Mimeogr. Cir. 15. 27pp., illus., mimeogr. Bozeman, Apr. 1939. 100 M76M no. 15

Saunderson, M. H. A method for the valuation of livestock ranch properties and grazing lands. Mont. Agr. Expt. Sta. Mimeogr. Cir. 6. 20pp. Bozeman, Mar. 1, 1938. 100 M76M no. 6

Williams, R. M. and Post, A. H. Dry-land pasture experiments at the Judith basin branch station, Moccasin, Montana. Mont. Agr. Expt. Sta. Bul. 388. 25pp., illus. Bozeman, Mar. 1941. 100 M76 no. 388

"It is the purpose of this bulletin to summarize the results of some early work with pasture grasses and to discuss in detail a recent grazing

experiment in which crested wheatgrass is being compared with native range and brome grasses."

Nebraska

Frolik, A.L. and Newell, L.C. Brome grass production in Nebraska. Nebr. Agr. Expt. Sta. Cir. 68. 16 pp., illus. Lincoln, Mar. 1941. 100 N27 no. 68

Pierce, R.O. Farm weir for measuring irrigation water. Nebr. Col. Agr. Ext. Cir. 759. 9 pp., illus., mimeogr. Lincoln, Feb. 1941. 275.29 N272 Ex na 759

New Jersey

New Jersey agricultural experiment station. Analysis of United States soils. Section I. North Atlantic states, by J.C. Lipman, J.S. Joffe and A.B. Conybeare. Data assembled by Works progress administration, project 165-22-6239. Preliminary assembly by CWA and EPA. 49 pp. New Brunswick, June 1940. 56.42 N46

This is the first part "of a vast structure" called "The Plant Food Resources of the United States." The scope of the study was originally outlined in N.J. Agricultural experiment station bulletin 607, entitled "Preliminary note on the Inventory and Balance Sheet of Plant Food Resources in the United States."

New Mexico

Cockerill, P.W., Hunter, Byron and Pingrey, H.B. Type of farming and ranching areas in New Mexico. Part II. N. Mex. Agr. Expt. Sta. Bul. 267. 134 pp., illus. State College, Dec. 1939. 100 N465 no. 267

Presents a detailed description of each of the type of farming areas and also of the subareas. Should be consulted with Part I (Bulletin 261) in order to obtain a comprehensive understanding of the agriculture of the state of New Mexico.

New Mexico agricultural experiment station. Fifty-first annual report, 1939-1940. 82 pp. State College [1941] 100 N465 51st

Among the projects described which are of interest to soil conservationists are Project XLIII - A study to determine the economic and social effects on farms resulting from the operations of a definitely planned program of soil conservation, p. 12. It is stated that "data for 1939 show that the time required to farm on the contour in Curry county was approximately 16 percent greater than for ordinary straight rows. The most important factor responsible for this increase was the number of turns per acre, which were approximately 40 percent more on contoured than on straight-row fields. Yield samples were secured on 22 grain-sorghum fields. Ten of the fields were contoured and 12 were straight row. Average yields of 14.6 bushels an acre were secured on straight row fields and 21.6 bushels were obtained from contoured."

Project VIII - Dry-farming investigations in northeastern New Mexico, pp. 23-26. Attention is directed to the fact that "in general, less soil blowing took place in this area during 1939 than in the previous year. This is attributable to the increase in vegetative cover over the area in general. There are places, however, where wind erosion did a great deal

of damage and wind erosion will, no doubt, continue to be a major problem in northeastern New Mexico."

Project Bl - Studies of the revegetation of southwestern ranges by controlled grazing, utilization of runoff water and reseeding, pp. 33-36. Part I. Natural revegetation. Part II. Artificial revegetation. Part III. Determining the carrying capacities of ranges. Irrigation (numerous experiments and projects) pp. 72-79.

New York

Gustafson, A.F. Soil and field crop management for southeastern New York. N.Y. (Cornell) Agr. Expt. Sta. Bul. 746. 31pp., illus. Ithaca, Dec. 1940. 100 N486 no. 746

Ohio

Moore, H.B. and Headington, R.C. Agriculture and land use as affected by strip mining of coal in eastern Ohio. Ohio Agr. Expt. Sta. Dept. Rural Econ. Mimeogr. Bul. 135. 37pp., illus., mimeogr. Columbus, Sept. 1940. 281.9 Oh32 no. 135

Article of same title, in condensed form, appears in Ohio Agr. Expt. Sta. Bimo. Bul. 25(207):174-177. Nov./Dec. 1940.

Ohio agricultural experiment station. Dept. of rural economics. Forms for use in developing a farm plan. Ohio Agr. Expt. Sta. Dept. Rural Econ. Mimeogr. Bul. 134. 20pp., forms, mimeogr. Columbus, Sept. 1940. 281.9 Oh32 no. 134

Oklahoma

Elwell, H.M., Daniel, H.A. and Fenton, F.A. The effects of burning pasture and woodland vegetation. Okla. Agr. Expt. Sta. Bul. B-247. 14pp., illus. Stillwater, Apr. 1941. 100 Ok4 no. B-247

"Literature cited," p. 14.

Table I. Effect of annual fall burning on yield of native grass; Red Plains conservation experiment station, Guthrie, Okla.

Table II. Soil and water losses from burned and unburned woodland at the Guthrie station, 1931-39.

Elwell, H.M. Progress report of land reclamation and pasture investigations on abandoned and scrubby oak areas in central Oklahoma. Okla. Agr. Expt. Sta. Mimeogr. Cir. 65. 9pp., illus., mimeogr. Stillwater, Jan. 1941. 100 Ok4M no. 65

"Literature cited," p. 9.

"In cooperation with Soil Conservation Service, U.S.D.A."

Summary: "The Oklahoma agricultural experiment station, realizing the importance of conserving soil and water obtained in 1932 near Guthrie, Oklahoma, about 110 acres of land which was typical of a large portion of the central cross-timbered area of the state...

"Experiments conducted on woodland and virgin grassland watersheds... show that the native grass alone is slightly more effective in preventing soil and water losses than the mixed vegetation of scrubby trees and grass. Due to such findings, the brush and timber were removed from

the 35 acres of virgin land. A good cover of native grass was obtained by natural plant succession in about three years by controlling sprouts, preventing fires, and avoiding over-utilization of the vegetation...

"According to the best information available, it may take 25 years or longer for the native climax grasses to reestablish themselves under natural conditions on abandoned land. Results obtained indicate that this period may be shortened by growing sweet clover with light applications of phosphate and lime and then seeding native grasses following the clover..."

Tucker, E.A. Summary of Pecan creek farm business records, Muskogee county, Oklahoma 1937-1939. A study to measure the effects of conservation practices on farm organization, operation, and income. Okla. Agr. Expt. Sta. Mimeogr. Cir. 64. 4pp., mimeogr. Stillwater, Aug. 1940. 100 Ok 3 Mno 64
"In cooperation with Soil conservation service, U.S.D.A."

Oregon

Aldrich, W.W. and others. Anjou pear responses to irrigation in a clay adobe soil. Oreg. Agr. Expt. Sta. Bul. 374. 103pp., illus. Corvallis, July 1940. 100 Or3 no. 374

Burrier, A.S. and Gorton, W.W. Land use and production costs on dry-land wheat farms, Columbia basin, Oregon. Oreg. Agr. Expt. Sta. Bul. 373. 68pp., illus. Corvallis, June 1940. 100 Or3 no. 373

Hochmuth, H.B. and Gorton, W.W. Ranch organization and range land use in Coos and Curry counties, Oregon. Oreg. Agr. Expt. Sta. Bul. 381. 40pp., illus. Corvallis, Dec. 1940. 100 Or3 no. 381

Pennsylvania

Pennsylvania state college. School of agriculture and experiment station. Dept. of agricultural economics. A preliminary economic appraisal of the soil conservation program in the west branch Octoraro creek watershed in Lancaster county, Pennsylvania for the period 1935-1938 [by] David H. Walter, assistant agricultural economist, Soil conservation service. 24pp., mimeogr. State College, Feb. 1941. 281.073 P38Pr

Rhode Island

DeFrance, J.A. Planting of woody plants for food and shelter for wildlife. R.I. Agr. Expt. Sta. Misc. Pub. 9. 10pp., mimeogr. Kingston, Apr. 1941. 100 R34M no. 9

The author states that "considerable of the...discussion has been abstracted from Farmer's Bulletin 1719 written by Wallace B. Grange and W.L. McAtee and coupled together with the experiences of others interested in wildlife conservation.

South Carolina

Peterson, M.J. An economic study of agriculture in the Little Beaverdam creek area, Anderson county, South Carolina. S.C. Agr. Expt. Sta. Bul. 332. 54pp., tables. Clemson, Mar. 1941. 100 So8 no. 322

"The major purpose of the study was to determine the factors having the greatest influence on the success or failure of farms within the area. Because the Soil Conservation Service has a project area within the Little Beaverdam region a further purpose was to compare the farms under agreement with the Soil Conservation Service with those not under agreement."

Division of the bulletin is as follows: Factors affecting labor income; the status of the farm operator; successful and unsuccessful farms; opportunities for improving the farm business.

South Dakota

Nelson, A.G. Planning minimum sized ranches and farms for the Hyde county area in South Dakota. S. Dak. Agr. Expt. Sta. Bul. 346. 31pp., illus. Brookings, Dec. 1940. 100 So82 no. 346

This study was made for the purpose of analyzing physical and economic data pertaining to the Hyde county to find what types of agriculture are best suited to the area.

Tennessee

Holmes, H.C. Planning the farm layout and cropping system. Tenn. Agr. Col. Ext. Pub. 245. 24pp., illus. Knoxville, Nov. 1940. 275.29 T25 no. 245

Strickland, L.J. Tables of characteristics of Tennessee soils according to soil regions. Tenn. Agr. Col. Spec. Cir. 129. 33pp., mimeogr. Knoxville, Sept. 1940. 275.29 T25C no. 129

Texas

Garin, A.N. and Gabbard, L.P. Land use in relation to sedimentation in reservoirs, Trinity river basin, Texas. Tex. Agr. Expt. Sta. Bul. 597. 65pp., illus. College Station, Jan. 1941. 100 T31S no. 597

Indicates the extent and cost of siltation damages to reservoirs and determines the relationship of such damages to land use in the watersheds involved.

The estimated costs and the evaluated relative farm and town benefits of a comprehensive upland erosion control program in one reservoir watershed, that of the Kaufman City Lake, are reported in detail.

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Buhler, E.O. Forest and watershed fires in Utah. Utah Agr. Expt. Sta. Cir. 115. 27pp., illus. Logan, Mar. 1941. 100 Utl no. 115

Discusses brush burning, floods following fires, lessons from floods, soil erosion and fire, flood damage to highways.

Washington

Hurd, E.B. and Hollands, H.F. Economic conditions and problems of agriculture in the Yakima valley, Washington. The Yakima-Tieton irrigation district. Wash. Agr. Expt. Sta. Bul. 393. 56pp., illus. Pullman, Dec. 1940. 100 W27E no. 393

Washington agricultural experiment station. Fiftieth annual report for the fiscal year end June 30, 1940. 124pp. Pullman, Dec. 1940. (Wash. Agr. Expt. Sta. Bul. 394) 100 W27E 50th, 1939/40

Soil and water conservation experiment station, Glenn W. Horner, in charge, pp. 106-108 (information on studies of soil erodibility, effect of plant cover on runoff and erosion, relation of cropping practices to erosion control, tillage practices for erosion control, runoff from agricultural watersheds); Nursery division, Soil conservation service, A.L. Hafenrichter, regional chief, pp. 109-114.

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Gumbel, W.C. Conserving soil and water through organized effort. W. Va. Agr. Col. Ext. Cir. 326. 16pp., illus. Morgantown, June 1940. 275.29 W22C no. 326

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Turner, F.H. Soil and crop practices in Wisconsin. Wis. Agr. Col. Spec. Cir. [unnumb.] 15pp., illus. Madison, Feb. 1941. 275.29 W75S

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Hough, G.J. Rock weathering and soil profile development in the Hawaiian Islands. U.S. Dept. Agr. Tech. Bul. 752. 43pp., tables. Washington, U.S. Govt. print. off., Feb. 1941. 1 Ag84Te no. 752
"Literature cited," pp. 42-43.

Jones, L.E. The sargeant county farmer looks forward in his adjustment problems. U.S. Bur. Agr. Econ. F.M. 19. 53pp., illus. Washington, D.C., Feb. 1941. 1.941 L6F22 no. 19

"This report, 'relating to a county hit by frequent droughts, grasshoppers and wind erosion,' describes the information being used by the farmers in coping with their farm-management problems. It deals with trends in agriculture, the present economic situation of the county, and the first steps taken by these farmers in making their adjustments. The budgets contained in this report were developed by farmers living in the southwestern part of the county under the supervision of the Sargent county agent, S.M. Thorfinnson with technical guidance from the author."

Mathews, O.R. and Barnes, B.F. Dry land crops at the Dalhart (Texas) field station. U.S. Dept. Agr. Cir. 564. 67pp., illus. Washington, U.S. Govt. print. off., Nov. 1940. 1 Ag84C no. 564

"Literature cited," p. 51

Wind erosion, pp. 6-7; strip cropping, pp. 35-37; Soil moisture, pp. 37-44.

U.S. Bureau of plant industry. Division of dry land agriculture. Methods of disposal of crop residues for growing wheat after fallow in eastern Oregon. 20pp., mimeogr. [Washington, D.C., 1941?] 1.865 D3M56

Utilization of crop residues, and results at Moro and Pendleton, Oregon field stations are discussed.

"In developing a soil conservation program for the wheat-growing area of the Pacific Northwest the following facts should be given consideration: (1) Wheat yields are materially influenced in certain sections by both depth of tillage and quantity of straw that is mixed with the surface soil. (2) The depressing effect on yield may prove to be less when more of the straw is left on the surface than when it is mixed with the soil. Further experimental data are needed to determine to what extent and why the manner of straw disposal, especially its position in the soil, affects crop yields and soil erosion. (3) When enough straw is left on or near the surface adequately to protect it from soil and water losses, difficulties may be encountered in cultivating the fallow to keep it free from weeds and to prepare a proper seedbed for winter wheat. Implements need to be devised that are better suited to weed eradication and seedbed preparation on trashy fallow land. (4) Light applications of a nitrogenous fertilizer, either at time of seeding or time of plowing, will increase yields on trashy fallow land in the higher rainfall sections. Whether fertilizer applications will aid in maintaining soil fertility by hastening straw decomposition needs to be determined."

U.S. Dept. of agriculture. Interbureau coordinating committee on a rural conservation works program. Conserving both human and natural resources by utilization of the unoccupied time of needy rural people in conservation of the physical resources upon which they must depend in the future. 42pp., illus. mimeogr. Washington, D.C., Dec. 29, 1939. 1.90 C2In8C

--- Supplement no. 1. 9pp., illus., mimeogr. Washington, D.C., Jan. 4, 1940. 1.90 C2In8C Sup. 1

U.S. Forest experiment station, Northeastern. Annual report for 1940... C. Edward Behre, director. 47, xxxviii pp., mimeogr. New Haven, Conn. [1941?] 1.9 F7622I

Of interest are the sections on farm forestry (New York) - consumption and outlets for farm forest products, pp. 30-32; flood control surveys (Merrimack and Connecticut rivers) including information on "interesting results on soil freezing in relation to forest cover," pp. 35-37.

[U.S. Office of land use coordination. Water facilities board] Water facilities area planning handbook, under the provisions of the water facilities act (Public no. 399 - 75th congress) 59pp., processed. [Washington, D.C.] Jan. 1, 1941. 1.915 W2W291

[U.S. Office of land use coordination. Water facilities board] Water facilities procedure manual. unpub., processed. [Washington, D.C., Dec. 31, 1940] 1.915 W2M31

Soil Conservation Service

Beutner, E.L., Gaebe, R.R. and Horton, R.E. Sprinkled plat runoff and infiltration experiments on Arizona desert soils. U.S. Soil Conserv. Serv. SCS-TP-38. 30pp., illus., processed. Washington, D.C., Sept. 1940. 1.96 Ad6Tp no. 38

Prepared in cooperation with the Arizona agricultural experiment station, Tucson, Arizona.

"This paper was presented in abstract form at the meetings of the American geophysical union in April 1940."

Black, C.D. What Zanesville cooperators think of the S.C.S. program. U.S. Soil Conserv. Serv. Ohio Val. Reg. Tech. Notes 3. 9pp., mimeogr. Dayton, Feb. 28, 1941. 1.9603 T22 no. 3

As indicated in table 2, p. 3, farmers of the Salt creek project reported a favorable reaction to the program income from their farms having increased. Other questions reported on are strip cropping, pasture improvement, alfalfa, grass meadows and woodland.

Calkins, H.G. Man and gullies. U.S. Soil Conserv. Serv. Southwest Reg. Reg. Bul. 75. 9pp., mimeogr. Albuquerque, Mar. 26, 1941. 1.9608 R26 no. 75
Originally appeared in New Mexico Quarterly Review, v. 11, no. 1, February 1941.

"There are at least two schools of thought with regard to the present cycle of erosion in the west and southwest, one school of thought leans toward the belief that today's erosion is largely a result of climatic change, a change to a more arid climate (See article by Kirk Bryan entitled Erosion in the southwest, New Mexico Quarterly Review, Nov. 1940). The other school of thought believes that the present erosion cycle is largely due to man's disturbance of plant cover through overgrazing, building of roads and trails, and other activities.

"Neither school neglects the viewpoint of the other in drawing its own conclusions. But each leans well away from the other, one toward man as a factor, the other towards climate. The following article is one of the most complete presentations of one point of view." -- Foreword.

Durand, F.V. and Nesbit, R.J. Use more live dams. U.S. Soil Conserv. Serv. Ohio Val. Reg. Reg. Cir. 230. 3pp., illus., mimeogr. Dayton, Mar. 19, 1941. 1.9603 R26 no. 230

"For fence row washes and small gullies where the farmer must furnish his own material, his own labor, and construct large numbers of erosion checks, live dams (of native stock or shrubs found on almost every farm) are clearly the most practicable."

Aside from their effectiveness in controlling erosion, live dams are an important source of food and cover for wildlife.

Edminster, F.C. Wildlife management through soil conservation on farms in the northeast. U.S. Dept. Agr. Farmers Bul. 1868. 53pp., illus. Washington, U.S. Govt. print. off., Feb. 1941. 1 Ag84F no. 1868

How wildlife habitats may be developed with vegetation used to protect the soil.

Frontz, LeRoy. Fire - farm forest enemy. U.S. Soil Conserv. Serv. Ohio Val. Reg. Tech. Notes 7. 3pp., mimeogr. Dayton, Apr. 16, 1941. 1.9603 T22 no.7

Hopp, Henry. Methods of distinguishing between the shipmast and common forms of black locust on Long Island, N.Y. U.S. Dept. Agr. Tech. Bul. 742. 24pp., illus. Washington, U.S. Govt. print. off., Jan. 1941. 1 Ag84Te no.742
"Literature cited," p.23.

Morrish, R.H. Contour planting of orchards. U.S. Soil Conserv. Serv. Ohio Val. Reg. Tech. Notes 2. 4pp., mimeogr. Dayton, Feb. 26, 1941. 19603 T22 m2
Abstracted from the Benton Harbor, Michigan, project monograph.

Morrish, R.H. Cover crops in orchards. U.S. Soil Conserv. Serv. Ohio Val. Reg. Tech. Notes 6. 5pp., mimeogr. Dayton, Apr. 9, 1941. 1.9603 T22 no.6
Results at the Benton Harbor soil conservation project in Berrien county, Michigan indicate that "the effectiveness of contouring or terracing as soil conserving practices is increased materially by the use of a cover crop in winter or in both summer and winter."

Rule, G.K. Toward soil security on the northern Great Plains. U.S. Dept. Agr. Farmers' Bul. 1864. 78pp., illus. Washington, U.S. Govt. print. off., 1941. 1 Ag84F no.1864

Touches briefly on the major characteristics of the section including Montana, Wyoming, North Dakota, South Dakota and Nebraska, such as soil, climate and natural vegetation. Erosion is discussed, followed by controls and cures for land misuse such as water conservation, strip farming, tillage, terraces, fallowing, trees on the plains, regrassing, and range management. Finally, there is a discussion of five different demonstration areas, Park River, N. Dak., Froid, Mont., Lander, Wyo., Plum Creek, Nebr. and Huron, S. Dak.

U.S. Soil conservation service. Better harvests through conservation farming, by R.E. Uhland. 10pp., illus. Washington, U.S. Govt. print. off., Mar. 1941. 1.6 So3B

Presents some of the results that have been obtained in recent years through contour cultivation and terracing in the southwest and the southern Great Plains.

Table I. Run-off and cotton yield 1927-38, at Spur, Texas, from two 10-acre fields, one with closed level terraces and the other not terraced, and the value of the extra yields gained by terracing. Table II. Comparative bean yields from terraced and contoured fields and untterraced and noncontoured fields in Estancia Valley, N. Mex., 1936-39. Table IV. Summary of wheat yields from terraced and contoured fields and untterraced and uncontoured fields in the southern Great Plains region, 1939. Table VI. Comparison of sorghum yields from fields with and without soil and moisture treatments near Dalhart, Tex., in 1937.

U.S. Soil conservation service. Conservation farming for the hard lands of the southern Great Plains, by Tom Dale. 27pp., illus. Washington, U.S. Govt. print. off., Feb. 1941. 1.6 So3Ch

A publication prepared primarily for farmers.

Discusses soils, physiography, climatic environment and erosion of the hard lands of Kansas, Colorado, Oklahoma, Texas and New Mexico included

in the Great Plains. Also gives information on coordination of conservation practices; economic factors; changes in land use; water conservation; crop, soil and farm or ranch management; wildlife and woodland program.

U.S. Soil conservation service. Conservation farming for the sandy lands of the southern Great plains, by Tom Dale. 25pp., illus. Washington, U.S. Govt. print. off., Feb. 1941. 1.6 So3C

A map indicates soil conservation problem area groups of the sandy croplands of the southern Great plains.

U.S. Soil conservation service. Guarding a heritage. 11pp., illus. [Washington, U.S. Govt. print. off., Feb. 1941] 1.6 So3G

U.S. Soil conservation service. New landmarks of soil conservation. [24pp.] illus. [Washington, U.S. Govt. print. off., 1941] 1.96 Ad6N

By means of pictures "the following pages show how the individual problems of soil depletion are being solved, and describe the new patterns of soil conservation that are being etched upon the land."

U.S. Soil conservation service. Soils and security, by H.H. Bennett. 25pp., illus. Washington, U.S. Govt. print. off., 1941. 1.8 So3Soi

Value of soil, beginnings of erosion, erosion and conservation in foreign lands, soil waste in the United States, scope of the erosion problem, backgrounds and causes, effects, cost of erosion, silting, erosion and water supplies, erosion and floods, economical consequences, program of the Soil conservation service, techniques of erosion control, results of conservation work.

U.S. Soil conservation service. Terrace construction with small equipment in the south, by W.A. Wald and P.H. Price. 12pp., illus. [Washington, U.S. Govt. print. off., Dec. 1940] 1.6 So3Te

Discusses the plow and scraper; plow and V-drag; one-way disk tiller and small-blade terracers.

U.S. Soil conservation service. The work of the Soil conservation service, prepared by M.M. Tozier. 12pp., illus. Washington, U.S. Govt. print. off., Feb. 1941. 1.6 So3W

U.S. Soil conservation service. Cooperative relations and planning. Division of information. Style of manuscripts to be published in the departmental series, for authors of the Soil conservation service. 40pp., mimeogr. [Washington, D.C.] Dec. 1940. 1.96 R27St

U.S. Soil conservation service. Forestry divisions. Intensive projects under the cooperative farm forestry act. U.S. Dept. Agr. Leaflet 208. 6pp., illus. [Washington, U.S. Govt. print. off., 1941] 1 Ag84L no. 208

The what, why, how and who of the farm forestry program.

Includes the cooperative farm forestry act, Public no. 95, 75th Congress.

U.S. Soil conservation service. Northeastern region. Soil conservation and the public schools, by W.W. Reitz. 5pp., mimeogr. Upper Darby, Jan. 1941. 1.9601 R27

"There is a growing demand for teaching materials on soil conservation in the public schools... Frequently we receive inquiries as to how this material is used... This is an effort partially to meet this demand, by passing along such information as has come to our attention."

U.S. Soil conservation service, Ohio valley region. Regional group planning committee. Suggestions for group planning. U.S. Soil Conserv. Serv. Ohio Val. Reg. Admin. Pointers 4. 6pp., mimeogr. Dayton, Apr. 17, 1941. 1.9603 Ad6 no.4

Outlines procedure for group farm planning.

U.S. Soil conservation service. Ohio valley region. Soil conservation agronomy. For use in Civilian conservation corps camps, by Allan T. Leffler, area agronomist. 65pp., illus. [Dayton] 1940. 1.9603 So31

There are 11 lessons as follows: 1. Erosion can be controlled. 2. Importance of vegetation in control of erosion and in conservation of water. 3. The relation of plant life and general farm crops to an effective soil conservation program. 4. Crops best suited for erosion control. 5. Crop rotations. 6. Contour farming. 7. Controlling erosion by strip cropping. 8. The use of cover crops in preventing erosion and rain run-off, and in adding humus to the soil. 9. Pastures and their improvement. 10. Crop improvement by use of manure, lime and fertilizer. 11. Relation of crops to soil fertility.

U.S. Soil conservation service. Pacific southwest region. Report of woodland survey of the Pine nut hills, Douglas county, Nevada, with suggestions for woodland management, by Jack L. Reveal, acting district forester, Yerington, Nevada. 17pp., 10 tables, illus., mimeogr. Berkeley, Sept. 1940. 1.9609 R293

U.S. Soil conservation service. Southeast region. Research with peaches in the south (symposium). Recent developments in planting cultivation, and cover crop practices, by John T. Fregier, project supervisor, orchard erosion investigations. Presented before the annual session of the Southern section, American society for horticultural science, Atlanta, Georgia, February 6, 1941. 4pp., mimeogr. Clemson, S.C., 1941. 1.9604 B74
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U.S. Soil conservation service. Upper Mississippi region. The cost of soil erosion estimated in monetary terms for some of the major soil groups in the upper Mississippi valley, by Forrest G. Bell and Kenneth S. Davis. 45pp., illus., mimeogr. Milwaukee [1941] 1.9605 C82

U.S. Soil conservation service, Upper Mississippi region. Farmers response to a planned program of soil conservation in the Deer-Bear creek demonstration area. A confidential report, issued by Division of economic research, University Farm, St. Paul, Minnesota. 32pp., processed. [Milwaukee] Feb. 1941. 1.9605 F23

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U.S.National resources planning board. Federal aids to local planning, June 1940. 151pp. Washington,U.S.Govt.print.off.,1941. 173.2 N214Fa

Soil conservation service,pp.34-40(Includes introductory and general statement of functions,activities affecting and assistance to local planning.Local planning data and information available is listed as follows:Planning bibliographies;Planning information data,maps,plans, research material,etc.;Illustrated regional material)

U.S.National resources planning board.Subcommittee on state water law.

Summary of the statutes affecting water in the 31 eastern states.

Prepared under the supervision of Duane E.Minard,Attorney at law,by Sheldon D.Klein. 117pp.,mimeogr. [Washington,D.C.]June 1940. 173.2 N214Sw

U.S.Tennessee valley authority. The Wheeler project.A comprehensive report on the planning,design,construction,and initial operations of the Wheeler project. U.S.Tenn.Valley Authority.Tech.Rpt.2. 362pp., illus. Washington,U.S.Govt.print.off.,1940. 173.2 T25Ter no.2

Gives "important and useful facts" about the Wheeler dam and reservoir located on the Tennessee river in northern Alabama and constructed by the Tennessee valley authority.

Williams,G.R.and Crawford,L.C. Maximum discharges at stream-measurement stations through December 31,1937.With a supplement including additions and changes through September 30,1938,by W.S.Eisenlohr,jr. U.S.Geol. Survey.Water-Supply Paper 847. 272pp. Washington,U.S.Govt.print.off.,1940. 407 G29W no.847

"The records given in this report are arranged in tables covering areas whose boundaries coincide with those of the areas covered by the Geological Survey's 14 annual water-supply papers in the surface water supply of the United States.The boundaries of these areas also coincide with natural drainage features,as indicated below.

Table.1.North Atlantic slope basins.2.South Atlantic slope basins. 3.Ohio river basin.4.St.Lawrence.5.Hudson bay and upper Mississippi. 6.Missouri.7.Lower Mississippi.8.Western Gulf of Mexico.9.Colorado. 10.Great Basin.11.Pacific slope basins in California.12.Pacific slope basins in Washington and upper Columbia river basin.13.Snake river basin.14.Pacific slope basins in Oregon and lower Columbia river basin.

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- Fox, Harold. Practical summer work for juniors in agriculture. Actual field experience with the Soil Conservation Service provides valuable training. Kans. Agr. Student 20(3):68. Mar. 1941. 276.8 K13
- Grundstein, N.D. A review of statutory appeals provisions. Personnel Admin. 3(6):12-19. Feb. 1941. 249.38 P43
"This is the second installment of a comprehensive study of provisions of civil service laws governing appeals from disciplinary action. The first installment appeared in the January issue."
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"Selected bibliography," pp. 196-197.
- Howell, A.C. A handbook of English in engineering usage. Ed. 2., 433pp. New York, John Wiley & sons, inc., 1940. 200 H83 Ed. 2
"This book is written to serve as a guide for the engineer who wishes to make his English clear, accurate and concise."
There is a chapter on report writing.
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"In the history of personnel administration in the federal government, no name is more important than that of Dr. Warner W. Stockberger, former

Director of Personnel of the United States Department of Agriculture."

"...Students of public administration invariably cite his career as a brilliant example of the specialist, the scientist in this case, who succeeded as an administrator in a general staff capacity. An examination of his career will throw some light on the reasons for that successful transformation."

Kress, A.L. Putting job rating to work. Amer. Managt. Assoc. Personnel Ser. 449. 30pp. New York, 1941. 280.9 Am38P

In addition to the introductory article there are others as follows: Job classification structure, by C.E. French, pp. 8-10; Translating ratings into rates, a. Establishing minima and maxima, pp. 11-15; Setting up the rate ranges, by C.T. O'Connor, pp. 15-17; Incentive wages, by E.J. Benge, pp. 17-21; Hiring rates, by C.E. French, pp. 22-23; Administering the plan, by A.S. Redway, pp. 23-25.

Lasher, W.K. and Richards, E.A. How you can get a better job. 175pp. Chicago, American technical society, 1941. 249.3 L33

There are three parts to this book, Part I - The human element; Part II - Self management; Part III - Selling yourself.

Mapel, E.B. Stimulating employee self-improvement. Personnel Jour. 19(9):316-324, illus. Mar. 1941. 280.8 J824

Cites and describes ample testing technique utilized at the Carnegie Illinois Steel Corporation for three purposes: to stimulate discussion in conference groups; to stimulate individual effort toward the development of job skills; to stimulate and to direct interest in the actual performance of the job.

Niles, M.C.H. Middle management. The job of the junior administrator. 270pp. New York, Harper & brothers, publishers, 1941. 249.3 N59

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U.S. Forest service. Employee training program, prepared under the direction of E.W. Loveridge, assistant chief, by P. Keplinger, staff assistant in administrative management, with the general and the action plans by John C. Kuhns, assistant regional forester. 26pp. [n.p.] June 1940. 1 F76Em

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FINIS

